1-1-2017

Computer Assisted Language Learning For Spanish Oral Proficiency

May Ritta Bluestein
Wayne State University,

COMPUTER ASSISTED LANGUAGE LEARNING FOR SPANISH ORAL PROFICIENCY

by

MAY RITTA BLUESTEIN

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2017

MAJOR: CURRICULUM AND INSTRUCTION
(French)

Approved By:

_____

Advisor Date

_____

_____

_____

DEDICATION

This dissertation is dedicated to

my late mom, Suad Gorial,

with immense love and gratitude.

You taught me the most important curriculum—forgiveness and trust in the Lord.

To my loving husband,

Nathan Bluestein,

I am my beloved's and my beloved is mine.

To the tiny wonders who inspire me daily,

Serafina and Josephine,

I want to be like you when I grow up.

ACKNOWLEDGEMENTS

He who is mighty has done great things for me, and holy is His name.
Luke 1:49

I'm overwhelmed with gratitude by the thought that none of what I've accomplished up to this point could have been possible without the help, support, advice, encouragement, and prayers of the remarkable family, friends, colleagues, mentors, and students with whom God has surrounded me. Acknowledging the root of such blessings, all glory, thanks, and praise belong first to God, my Father—for his unsurpassable wisdom, mercy, and generosity.

I wouldn't even know His name, or His friendship, if it weren't for my mother, Suad Gorial. Though she no longer remains on this earth in a physical sense, her spiritual presence is something so real, so concrete. She has been my daily reminder of the promise I made to her long ago that I would complete my dissertation, and her voice resonates in my heart: "I am praying for you, for all the angels to surround you, every day, to help you finish your work, and to do a good job, too!" This being one of the last voicemails I received from her before she would pass only one month later, her voice has carried me through these past five years since her death. After her passing, my father, Lazar Gorial, became her voice—everything she would have said to me, or done for me, he suddenly and so naturally learned to say and do. I'm proud of the father he's become and grateful for his support, love, and prayers.

I thank my wonderful and supporting husband, Nathan Bluestein, for his constant moral support especially at times when the load became too heavy to bear. From helping with our children and the home, to being a listening ear and offering a comforting hand to hold, I know I could not have completed this work without him by my side. I thank my lovely daughters, Serafina and Josephine, for being my daily inspiration and purpose to persevere—they are my very breath.

I also thank my sisters Luma and Olivia, and brothers Samer and Johnny, for their outpouring of love and support throughout the years. They are a treasure and the greatest gifts my parents could have ever given me--each one has left an indelible mark on my heart. I owe much gratitude to Luma, Olivia, and my mother-in-law, Linda Bluestein, especially, who helped a great deal with caring for Serafina and Josephine when mommy had to study; it was a true consolation knowing I didn't have to worry because my little girls were in the best hands.

I owe special thanks to my main advisor and committee chair, Dr. Jazlin Ebenezer. Through the perpetual revisions over the years, she has embodied what it means to be an unforgettable teacher, mentor, and friend, sacrificing so much of her time and energy, pushing me to aim higher and higher. She reminds me so much of my mother in that regard, and that brought me much comfort at the most grueling times.

Many thanks as well to Dr. Michael Giordano, for serving on the committee and also for having been a remarkable teacher and mentor throughout the years. Having been his student since my undergrad years (that's over 15 years ago!), he is the one professor at WSU who has known me the longest and has shown tremendous commitment to my academic growth and transformation. He too has pushed me to heights I hadn't known I could reach--"Excelsior."

I owe many thanks as well to committee members, Dr. Jo-Ann Snyder and Dr. Lynda Wood, for their continual support, encouragement, compassion and willingness to make scheduling accommodations in order to set the final defense date. What a blessing and honor it has been to have them serve on the committee.

Many thanks as well belong to Tanya (pseudonym for the experimental teacher), for her willingness to participate in this study—it could not have been accomplished without her help and commitment. Also, I must thank the president Rev. Gerard LeBoeuf, and principal Frank

Accavitti III, at the participating school, for allowing me to conduct the experiment there and granting me the time I needed to complete the dissertation. I am especially grateful for the students who volunteered as participants in the study—their invaluable contribution will advance future foreign language studies.

There are countless other names missing here of those to whom I am indebted—several I can identify, and others are known only to the Lord. I thank Him for each one, knowing that I could not have climbed this mountain alone.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 INTRODUCTION

1.0 Background

In an increasingly technologically evolving culture, now more than ever, it is appropriate as teachers to examine the current pedagogical practices that exist in foreign language class. Considering the current generation of young students as "digital natives" (Presky, 2001a, 2001b), Thorne and Payne (2005) insist that there is concern to be had over a generation gap between today's teachers and students. Using focus groups and voluntary participation data, the Pew Internet and American Life Project (2002) confirm the existence of this generational gap. Upon such examination, one may find classrooms that neglect the needs of today's learners because students learn and process information much differently than their teachers did (Thorne & Payne, 2005). Today's foreign language learners may enhance their learning by integrating technology.

While several foreign language classrooms today lean towards a more integrated and communicative approach, even amongst these classrooms, technology and culture have yet to be fully integrated. The need to incorporate technology is clear, but the problem is that foreign language teachers may be untrained to use it appropriately within their curriculum. In order for technology to benefit students, it ought to be integrated thoughtfully and meaningfully into the curriculum. This study thus aims to provide an exemplar of meaningful integration of technology within the foreign language curriculum in order to improve oral Spanish language proficiency. Drawing upon the empirical research studies on computer assisted language learning, this study critically examines CALL as tool, medium, and tutor (Kern, 2006) and analyzes how the three intertwined strands develop oral proficiency. Further, because a disparity between theory and practice exists, this study is anchored in SLA theory underpinning CALL (Chapelle, 2001) and post-modern curriculum frameworks.

Considering that the focus of the study is to aid in students' Spanish oral proficiency development, the affective realms of anxiety and motivation are explored. The seminal article by Phillips (1992) found a negative relationship between foreign language anxiety and oral performance. Since then, foreign language anxiety researchers have consistently rendered the same results (Gregersen & Horwitz, 2002; Hewitt & Stephenson, 2012; Liu & Jackson, 2008; Zhang, 2004). Thus, the study also aims to examine whether integrating a learner-centered CALL curriculum could not only aide oral proficiency development, but also in decreasing students' foreign language anxiety towards speaking. Just as empirical studies have shown a negative correlation between foreign language anxiety and oral performance, several studies (Dörnyei & Clément 2000; Dörnyei & Schmitt, 2001; Ely, 1986; Gardner, 1985, 2000; Gardner & Lambert, 1972; Hernández, 2006; Masgoret & Gardner, 2003) in contrast have found a positive correlation between integrative motivation and achievement in the foreign language classroom. In fact, Hernandez (2006) specifically found integrative motivation to be positively correlated to **oral proficiency** in the second language.

Thus, in an effort to integrate technology into the foreign language classroom in a way that is meaningful, this three-tiered study examines the effect of a learner-centered CALL pedagogy on Spanish oral proficiency development, foreign language anxiety, and integrative motivation.

2.0 Problem Statement

First, a need exists for second language and foreign language teachers to consider a pedagogy that incorporates meaningful uses of CALL, serving as tool, medium, and tutor, on oral communication (Kern, 2006), grounded in SLA theory and Doll's post-modern framework. The present study seeks to examine the role of CALL combining its three functions (tool,

medium, and tutor) within the foreign language context, as a means to assist students in developing their voice and identity in the target language. Building upon Chapelle's (2001) six criteria for designing CALL tasks grounded in SLA theory, this study employed all six (language learning potential, learner fit, meaning focus, authenticity, positive impact, practicality) criteria, as well as Doll's post-modern framework (richness, recursion, relation, rigor).

Second, based on the empirical studies as well as this researcher's teaching experience, anxiety with oral communication continues to be a problem for foreign language students. To date, however, there has not been any intervention study utilizing SLA theory, CALL, and post-modern framework to solve this problem. Thus, this study proposes to take a long-researched variable (anxiety) and apply it to a long-occurring and still current problem (oral proficiency), using today's technology (Audacity©) framed by post-modern SLA and CALL tasks to possibly solve the problem.

Third, a need exists for second language and foreign language teachers to consider the impact of computer-assisted language learning on motivation. Meaningful uses of CALL in the foreign language context may help increase motivation, especially in relation to oral communication in the target language. Students of foreign language need the opportunity to develop their voice and identity over time. This study thus examines the effects of a CALL curriculum designed to give students the opportunity to develop their voice in the target language, over the course of an eight-week study, to uncover any changes in motivation toward speaking the target language. Based upon the need of empirical research using technology framed by SLA theory, post-modern framework, and CALL tasks to impact integrative motivation and achievement toward foreign language oral proficiency, this study proposes to take a long-researched variable (motivation) and apply it to a long-occurring and still current

problem (oral proficiency), using today's technology (Audacity©) framed by post-modern SLA and CALL tasks. Due to the confusion in the field over the various models of understanding integrative motivation and foreign language learning, this study also aims to add to the research that supports Gardner's (1985) socio-educational model.

3.0 Research Objectives and Questions

Objective 1: To determine how CALL tasks grounded in SLA theory and Doll's post-modern framework elicit students' meaningful output related to specific areas of growth or weakness.

1. How do CALL tasks grounded in SLA theory and Doll's post-modern framework elicit students' meaningful output related to specific areas of growth or weakness?

Objective 2: To understand how high school students perceive their experiences with CALL task voice-recordings to develop their Spanish oral proficiency.

2. How do high school students perceive their experiences with CALL task voice-recordings to develop their Spanish oral proficiency?

Objective 3: To observe Spanish oral proficiency development throughout the CALL tasks.

3. What are the significant differences based on the scores students obtained for each of the CALL task voice-recordings from one to eight that determined students' Spanish oral proficiency?

Objective 4: To understand how a learner-centered CALL pedagogy employing the three metaphors of CALL can enhance students' Spanish oral proficiency.

4. How does CALL as tool, medium, and tutor, grounded in SLA theory and Doll's post-modern framework enhance high school students' Spanish oral proficiency?

Objective 5: To observe the effect of CALL voice-recordings on foreign language anxiety and to compare the levels of foreign language anxiety between the experimental group,

which received the intervention, and the control group, which used traditional oral assessments.

5. After repeated experiences in speaking the foreign language, via CALL voice-recordings, will foreign language anxiety decrease in the experimental group of students as compared to the control group?

Objective 6: To observe any differences in achievement on a real-time oral performance between the experimental and control groups.

6. How do the students in the experimental group as a result of the CALL voice-recordings perform on a traditional real-time oral performance in front of the **class,** in comparison to the control group?

Objective 7: To compare the achievement between the experimental and control groups on various classroom assessments.

7. How do the students in the experimental group as a result of the CALL voice-recordings perform on the mid term exam, final oral exam, final exam, semester grade and end of year grade in comparison to the control group?

Objective 8: To understand how students perceive their anxiety levels in relation to oral proficiency and their experiences with either CALL voice-recordings, or traditional oral assessment.

8. How do both experimental and control group of students perceive their anxiety levels and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessment, respectively?

Objective 9: To observe any differences in the motivation of the experimental students in comparison with that of the control students, as a result of the intervention.

9. After repeated experiences in speaking the foreign language, via CALL voice-recordings, will motivation, and more specifically, integrative motivation, increase in the experimental group of students as compared to the control group?

Objective 10: To understand how students in the experimental and control groups perceive their motivation levels and oral proficiency.

10. How do both experimental and control group of students perceive their motivation levels and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessment, respectively?

4.0 Significance of Study

This study is significant for the following reasons:

This study contributes to the computer-assisted language learning literature by using technology as a tool, medium, and tutor for oral proficiency development in the high school classroom setting. Respectively, oral proficiency development using this study indicates a need to incorporate Chapelle's six CALL criteria and Doll's post-modern framework to the foreign language curriculum---using technology in a way that is meaningful. Because voice-recordings over time show evidence on the improvement of oral proficiency, this study contributes to the Computer-Assisted Language Learning and Second Language Acquisition literature. Voice-recording CALL technology serves as a valuable tool for teachers to aid high school students' oral proficiency development in the foreign language classroom. Students' perceptions of the use of CALL providing insights into the positive ways learners have experienced CALL should inspire foreign language teachers to use CALL as tool, medium and tutor to improve oral language proficiency.

Further, if voice-recordings over time reduce anxiety, this study may contribute to the Computer-Assisted Language Learning literature. Voice-recording technology might serve as a valuable tool for teachers to alleviate student anxiety in the development of oral communication in the foreign language classroom. Further, while most foreign language anxiety studies are quantitative in design (Liu & Jackson, 2008; Pichette, 2009; Sparks & Ganschow, 2007), this study will also incorporate qualitative analysis (Frantzen & Magnan, 2005; Hewitt & Stephenson, 2012) to gain new perspectives on student anxiety. This study also aims to fill the gap of the few studies (Tennant & Gardner, 2004) that incorporate technology use and anxiety in language learning.

Too, this study may contribute to the CALL literature, proposing an effective way for teachers to increase motivation towards oral communication in the target language, by using technology for oral communication development in the classroom setting. The results may also contribute to the literature in recognizing that CALL tasks based in SLA theory and post-modern framework help to increase student motivation. Lastly, this study may corroborate the previous findings lending more credibility to Gardner's (1985) socio-educational model.

5.0 Overview of Methodology

The methodology identified in the first article employed a mixed-methods approach, primarily qualitative and supported by quantitative, comprised of document analysis of voice-recording transcripts (Bird, 2005), post-intervention focus group interview (Krueger & Casey 2014), and students' written self-reflection journals (Morrow, 2005). Quantitative tests were used to measure improvement in student oral proficiency. The Friedman's test was used to analyze the eight different task scores (evaluated by the teacher) of the participants, and to determine whether any significant differences exist between the students' scores on Tasks 1 through 8.

Further, the Man-Whitney U test was used to compare the scores of the teacher's evaluations and the student self-assessments. Quantitative analysis was used to support the qualitative analysis.

Similarly, articles two and three used a mixed-methods approach with an experimental design, primarily quantitative in nature, with qualitative methods used to corroborate the quantitative findings. The purpose of such an approach is to triangulate the data and add richness to the results that might be lacking otherwise (Johnson & Onwuegbuzie, 2004). In article two, the Foreign Language Classroom Anxiety Scale (FLCAS) that measures state anxiety in a specific situation was used as the pre- and post-test to determine the effect of CALL on anxiety in Spanish oral communication for both groups. FLCAS data were collected and analyzed using Mann-Whitney U tests comparing both groups' anxiety levels. Post-focus group interviews were conducted with students of both groups in order to corroborate the results of the FLCAS. In article three, The Mini-Attitude and Motivation Test Battery (AMTB) that measures motivation was used as the pre- and post-test to determine the effect of CALL on integrative motivation in Spanish oral communication for both groups. Mini-AMTB data were collected and analyzed using Mann-Whitney U tests comparing both groups' integrative motivation levels. Post-focus group interviews were conducted with students of both groups, and experimental students completed a post-study reflective journal in order to corroborate the results of the mini-AMTB.

6.0 Description of Terms

Asynchronous Computer Mediated Communication (ACMC) refers to communication that is possible only through the use of a computer, not occurring in real-time (e.g., e-mail).

Computer Assisted Language Learning (CALL) refers to language learning that involves the computer as a tool, medium for communication, or tutor.

Computer Mediated Communication (CMC) refers to any form of communication

(synchronous or asynchronous) requiring the use of a computer.

Foreign Language Classroom Anxiety Scale (FLCAS) refers to Horwitz, Horwitz, and Cope's (1986) tool for measuring foreign language anxiety.

Foreign Language Anxiety refers to anxiety that is specific to learning foreign language.

Integrative Motivation involves the combination of the three constructs Integrativeness, Attitudes toward the Learning Situation and Motivation, from Gardner's (1985) socio-educational model.

Meaningful Output in this study, refers to the meaning a student creates through speaking the foreign language.

Mini-Attitude and Motivation Test Battery (AMTB) is the 11-question tool, based off Gardner's (1985) full AMTB, for measuring motivation.

Post-modernism in this study, refers to a curriculum that is rigorous, relational, recursive, and rich, according to Doll (1993).

Second Language Acquisition Theory (SLA) refers to understanding how non-native language is learned.

Synchronous Computer Mediated Communication (SCMC) refers to communication that occurs in real-time (e.g., chat room messaging, Skype conversation), through the use of a computer.

7.0 Overview of Study

Chapter one identifies a need for the meaningful integration of CALL technology into the foreign language classroom in order to help foreign language oral proficiency development, and to decrease anxiety and increase motivation towards speaking Spanish. The research objectives and questions for this study are clearly stated.

Chapter two presents the first article that discusses the effect of integrating computer-assisted language learning (CALL) with a voice-recording software into a Spanish curricular unit of study in order to improve native English speakers' foreign language oral proficiency. Chapter three presents the second article that discusses the effect of computer assisted language learning (CALL) voice-recordings on high school students' anxiety and the correlation between anxiety and achievement. Chapter four presents the third article that discusses the effect of computer assisted language learning (CALL) voice-recordings on high school students' integrative motivation and its correlation with achievement in Spanish oral communication.

All three article-chapters present and discuss the need for a study that reflects the status of research in a particular area of research, an extensive literature review, and theoretical frameworks to guide the study. The framework shared by all three articles is CALL rooted in second language acquisition theory and post-modern framework. Article two adds to the aforementioned framework with Horwitz, Horwitz, and Cope's (1986) conceptual model of foreign language anxiety, while the third article adds Gardner's (1985) socio-educational model to understand motivation in the context of foreign language learning. Each article has framed research questions and the significance of answering theses questions. Methodology is described and justified in each article. Results are presented logically and coherently. Implications are drawn based on the evidence presented in each article.

Chapter five concludes the dissertation with a summary of research findings, issues reflecting evidence, and implications.

CHAPTER 2 (Article One) ENGAGING HIGH SCHOOL STUDENTS IN COMPUTER ASSISTED LANGUAGE LEARNING: DEVELOPING FOREIGN LANGUAGE ORAL PROFICENCY

Abstract

The purpose of this mixed-method study was to determine the effect of integrating computer-assisted language learning (CALL) with a voice-recording software into a Spanish curricular unit of study in order to improve native English speakers' foreign language oral proficiency. Second language acquisition theory and post-modern curriculum framework guided this study. Fourteen Spanish level-two high school students participated in this eight-week long study. The intervention consisted of having students engage in voice-recordings of their oral language using eight successive CALL tasks. A post-intervention focus group interview as well as self-reflective journals were used to identify the qualitatively differing ways the students perceived their experiences using the CALL curricular unit for developing their Spanish oral proficiency. The student scores for each of the eight CALL task voice-recordings were collected to assess the development of students' oral proficiency. The qualitative results of the CALL tasks oral recordings revealed that the students' Spanish oral language proficiency meaningful output was high, medium, or low. Specific areas of students' growth in verb conjugation or weakness in pronunciation, expressions and vocabulary, and grammatical structures were also identified. The qualitatively differing ways students perceived CALL task recordings were as follows: anxiety decrease, motivation and confidence increase, and speaking improvement. Friedman's tests were run to find significant differences in the students' oral proficiency from one to eight consecutive tasks. The p-values 0.003, 0.007, 0.002, 0.003, and 0.007 of the students' scores on CALL tasks (2, 4, 5, 6, and 7) respectively, when compared to task 8, show a significant difference. Too, these quantitative results indicate that students'

meaningful output significantly improved by the time they reached the last task. The study implies CALL task oral recordings accompanied by self-evaluation and teacher feedback help students develop oral proficiency, archive meaningful output, monitor their own learning, and experience lower anxiety, higher motivation, and confidence towards speaking Spanish.

Keywords: Computer assisted language learning, second language acquisition, post-modern curriculum, oral proficiency, self-assessment, voice-recordings, voice-portfolio, analytic rubric.

1.0 Introduction

Computer-mediated communication, both synchronous and asynchronous, allows for more learner control (Chapelle, 2009; Kern & Warschauer, 2000) and the opportunity for more meaningful negotiations and scaffolding to take place (Smith, 2009). Synchronous computer mediated communication refers to activities online done in real time, such as live chat and instant messaging (e.g., via Skype), and asynchronous computer mediated communication refers to communication with a time lapse (e.g., e-mail, blogs, forums, wikis). The computer assisted language learning studies that involve socio-cultural and/or social constructivist approaches have been focusing on the development of students' foreign language speaking ability via either synchronous (Jeon-Ellis, Debski & Wigglesworth, 2005; Jepson, 2005; Payne & Whitney, 2002), asynchronous (Hsu, Wong & Comac, 2008) computer-mediated communication, or both (Volle, 2005).

Payne and Whitney (2002) in their 15-week pre- and post-intervention study found that the experimental group using two days face-to-face and two days synchronous computer-mediated Spanish communication text chat per week, that is, a total meeting of 21 times in a chat room, achieved significant gains in oral proficiency compared to the control group that used face-to-face conversation all four days. Thus, Payne and Whitney have confirmed the existence

of bi-modality transfer, as they discovered significant oral proficiency gains between experimental and control synchronous computer-mediated communication groups. Jeon-Ellis et al. (2005) in their eight-week qualitative study analyzed eight university English-only speaking learners' audio- and video- recordings of French in a first-year French elective course for the duration of one semester. The foregoing study that utilized a project-oriented CALL to examine learners' oral communication in completing various tasks found that collaborative dialogues impacted student learning and generated learning opportunities for French oral communication.

Volle's (2005) study involved 19 university-level Spanish language learners enrolled in an online course, which required them to complete two voice-email assignments (read-aloud passages and grammar drill), twice a week, for the duration of one semester. Students' performances on both assessments, pre- and post-study were compared, alongside oral online midterm and final examinations with the instructor. Volle found significant gains in students' oral proficiency by the end of the semester, but not in accuracy and articulation. Hsu et al. (2008) employed a mixed-method approach to examine the effect of audio-blogs on university level ESL learners for the duration of one spring semester. The students used their mobile phones to record themselves and create audio-blogs for archiving oral assignments, interacting with others, and evaluating their performance. Hsu et al. found that only the students who practiced constantly developed oral proficiency by the end of the study, and even those students had continued trouble with pronunciation. Jepson's (2005) experimental study compared 10 groups of non-native speakers of English, selected at random from an online English speaking website called *e-English* that serves teenage and adult users. This study compared five conversational text sessions and five conversational chat sessions and found out that more negotiation of

meaning, clarification of meaning, and repairs were made in the chat sessions versus the text sessions.

It is clearly evident that the aforementioned studies support either synchronous (Jeon-Ellis, Debski & Wigglesworth, 2005; Jepson, 2005; Payne & Whitney, 2002), asynchronous (Hsu, Wong & Comac, 2008) or both (Volle, 2005) forms of computer-mediated communication for foreign language learning. One study is experimental (Payne & Whitney, 2002), one pre- and post- (Payne & Whitney, 2002), one quantitative (Volle, 2005), one qualitative (Jeon-Ellis, Debski & Wigglesworth, 2005), and two mixed-method (Hsu, Wong & Comac, 2008; Jepson, 2005). All studies are long-term (Hsu, Wong & Comac, 2008; Jeon-Ellis, Debski & Wigglesworth, 2005; Payne & Whitney, 2002; Volle, 2005) except for one short-term study lasting only four weeks (Jepson, 2005). Only Payne & Whitney's (2002) study used an intervention of synchronous computer-mediated communication chat two days a week with the experimental group. All of the studies' participants consisted of university level students (Hsu, Wong & Comac, 2008; Jeon-Ellis, Debski & Wigglesworth, 2005; Jepson, 2005; 2005; Payne & Whitney, 2002; Volle, 2005) and just one may have also included high school students (Jepson, 2005) but confirmation either way is uncertain due to the design. One study (Payne & Whitney 2002) is based upon Levelt's (1989) model of language production and Working Memory theory while another (Jeon-Ellis, Debski & Wigglesworth, 2005) cites Vygotsky's social interaction and cognitive development theory as applied by Swain (2000). One study (Jepson, 2005) references sociocultural theory supported by CALL and CMC research. Two studies do not reference a particular theoretical framework but cite many empirical studies based on either SLA and CALL (Volle, 2005) or CALL and CMC (Hsu, Wong & Comac, 2008). As for the languages used in each study, two (Payne & Whitney, 2005; Volle, 2005) involved Spanish, one (Hsu, Wong &

Comac, 2008) ESL, one (Jepson, 2005) ESL and/or EFL and one (Jeon-Ellis, Debski & Wigglesworth, 2005) French.

In line with some features of existing studies, the current eight week long, interventional study used a mixed-methods approach to develop high school students' Spanish oral proficiency through a specially designed CALL curriculum consisting of eight tasks that integrates asynchronous computer-mediated communication via voice-recordings. Like Volle (2005)**,** this study is grounded in second language acquisition theory. Only the study at hand used post-modern curriculum framework (Doll, 2012).

Unlike any of the other studies (Hsu, Wong & Comac, 2008; Jeon-Ellis, Debski, & Wigglesworth, 2005; Jepson, 2005; Payne & Whitney, 2002; Volle, 2005), the focus of this study also included identifying specific areas of students' growth in verb conjugation or weakness in pronunciation, expressions and vocabulary, and grammatical structures. Unlike any of the aforementioned studies, this study used post-intervention focus group interviews as well as self-reflective journals to understand the qualitatively differing ways the students perceived their experiences of using CALL for developing Spanish oral proficiency. Like Payne and Whitney (2002) and Volle (2005), this study used quantitative methods to measure students' Spanish oral proficiency. However, unlike these authors' studies, Spanish oral proficiency was determined by measuring the significant differences based on the scores they obtained for *each* of the interventional consecutive CALL tasks from one to eight. The other studies did not search for significant differences between the scores received throughout the study. Rather, Volle (2005) only measured pre- and post- scores (not consecutive) on audio email assignments; She also measured scores obtained on a mid-term and final exam SCMC oral interview. Similarly, Payne & Whitney (2002) did not measure differences between scores obtained on the assignments

between the control and experimental. Rather, they measured differences in Spanish oral proficiency of the control and experimental groups based on the scores of a pre- and post- oral proficiency interview. Thus, this study differs in that it measured significant differences between the scores on Tasks 1 to 8, over the full course of the study.

1.1 CALL as Metaphor: Tool, Medium, and Tutor

Drawing upon Kern (2006), the current study critically examines how CALL as tool, medium, and tutor--a pedagogy that intertwines all three aspects--may develop students' Spanish oral proficiency. CALL as *tool* provides access to dictionaries, thesauruses, and concordances. CALL as *medium* is synchronous and asynchronous computer mediated communication because in these forms of communication with others, the technology provides an *environment* for the communication to occur. CALL as *tutor* provides instruction, feedback, testing in grammar, vocabulary, and pronunciation, for example.

The current study focuses on Kern's (2006) distinction amongst the three metaphors of CALL technology and further questions whether a *triangulation of all three roles* is beneficial to making the foreign language classroom learner-centered. While Kern (2006) identifies three metaphors of CALL technology, this study aims to center Kern's (2006) metaphors around the learner as represented in Figure 2.1.

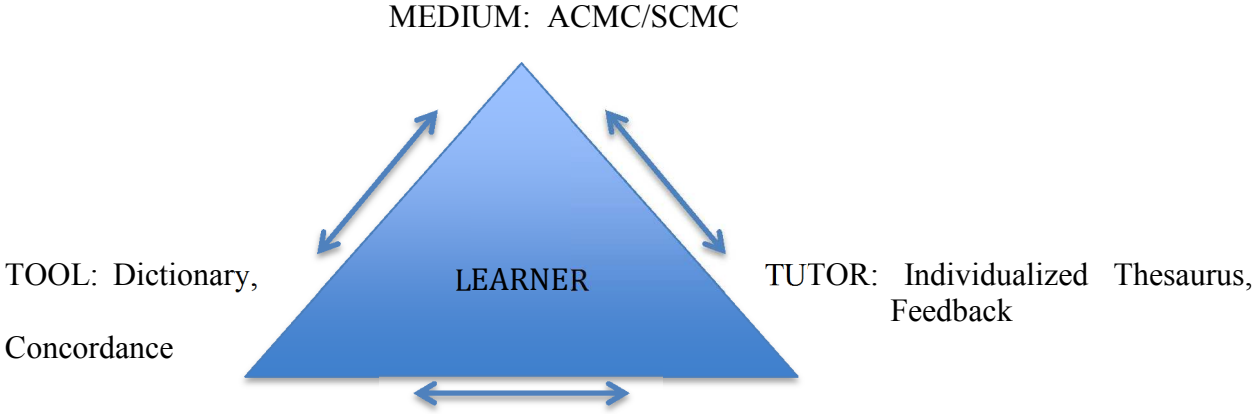

Figure 2.1 Learner-Centered CALL

Thus, while Kern (2006) focuses on the features of CALL, this study focuses upon the learner. Using a pedagogy that integrates all three metaphors may provide a more learner-centered approach. For example, some foreign language classrooms today encourage students to utilize an online language site that offers language study through interactive games, which uses a *tool* to look up translations, *medium* to communicate with other foreign language learners, and/or *tutor* to provide responses and feedback to questions via message boards (www.duolingo.com).

While some may argue against CALL as tutor that focuses more on grammar rather than the experience of constructing meaning (Garrett, 1991), others support that grammar instruction and lexical issues serve a valid purpose, especially in the more advanced levels of language learning (Chun, 2006; Cobb, 2007; Hubbard & Bradin Siskin, 2004; Nation, 2001). Explicit instruction using tutorial CALL has shown to significantly improve vocabulary learning (see Lafford, Lafford, & Sykes, 2007; Ranalli, 2009). Regardless of what the CALL tutor's target might be, students learning languages in five Canadian universities preferred the individualized tutorial approach to social computing activities (Peters, Wienberg, & Sarma, 2009). Thus, this study utilized the individualized tutorial approach alongside CALL as tool and medium.

2.0 Theoretical Frameworks

The study at hand is anchored in the second language acquisition theory (Chapelle, 2001) as in her CALL study, and post-modern curriculum framework (Doll, 1993) to improve oral Spanish language proficiency.

2.1 Second Language Acquisition Theory for CALL: Chapelle's Perspective

Chapelle (2001), has constructed six criteria for designing CALL tasks, each of them resting upon a theory of SLA and corresponding research. The first being **language learning**

potential, resting upon the research of attention, focus on form, and negotiation of meaning (e.g., Doughty & Williams, 1998; Gass; 1997, Long, 1996; Pica, 1994; Robinson, 1995; Schmidt, 1990). The second, **learner fit**, takes into consideration learner style, interest, age, and ability, and is based on Skehan's (1989) SLA research on individual differences. The third criterion, **meaning focus**, places emphasis on the learner's attention towards meaning during language tasks, and is based on the work of Pica, Kanagy, and Faludin (1993). The fourth criterion, **authenticity**, refers to the notion that the language task is based in reality, and could be something the student might encounter outside of the classroom (Bachman & Palmer, 1996; Lewkowicz, 2000). Fifth, the criterion of **positive impact** addresses the idea that the CALL task carries benefits beyond language learning; For example, completing a CALL task might not only help with language learning, but may also make students more computer literate. The sixth criterion is **practicality**, which emphasizes the ease of application within the classroom setting. That is, the CALL task and technology needed to perform it is accessible by the teacher and students. This list of criteria is useful for teachers who plan to use aspects of CALL in the classroom, and especially teacher-researchers aiming to design their own CALL study. The current study proposes a CALL and SLA curriculum integrating Chapelle's six criteria, but also pushing beyond the boundaries of the six criteria. The current study proposes that post-modern theory may contribute a greater depth that may be lacking in Chapelle's six criteria.

2.2 Post-Modern Curriculum Framework: William Doll's Perspective

According to Doll (1993), the "[post-modern curriculum theory is] a fascinating, imaginative realm (born of the echo of God's laughter) wherein no one owns the truth and everyone has the right to be understood" (p. 151). In contrast, the modernist curriculum is one that is linear, predictable, closed–ended and non-constructive. Doll's conceptualization of the

post-modern curriculum stresses the importance of self-organization, indeterminacy, stability through instability, order emerging spontaneously through chaos, and creative construction of meaning. Self-organization suggests a process that is open-ended, and non-teleological, guided by reflective action, interaction, and transaction. In order for self-organization to work, there must be a degree of turbulence. That is, something must trigger the self to re-settle itself after it has been challenged or perturbed (Piaget, 1980). It is this complexity or disequilibrium that leads to transformation. To reach these areas of self-organization and transformation, Doll asserts that the post-modern curriculum should be "rich, recursive, relational and rigorous" (p. 176).

Richness refers to multiple layers of meaning, multiple possibilities, and multiple interpretations. In order to achieve this, the curriculum must have a degree of chaos, disequilibrium, spontaneity, and lived experience. Applying this concept to oral communication in foreign language, richness may occur through meaningful dialogue and negotiating meaning. Providing students with opportunities to construct and co-construct language in contexts that relate to real-life for example, allows for a multiplicity of responses. For instance, if a certain unit revolves around themes of family and personal relations, having students communicate with a partner, asking about and describing their family members, would provide them with meaningful context and the opportunity to be creative with their language production. No two students would produce the exact same results, yet together, they would negotiate and create meaning.

Recursion refers to the process of reflecting upon one's work, which leads to exploration of self and text. According to Doll, a transformative curriculum relies upon recursive reflection. It is recursive in that it allows for the realization that every ending leads to a new beginning, and

every new beginning rises from a prior ending. It is important to note that recursion is not synonymous with repetition, which denotes a closed frame. Rather, recursive reflection implies an opened frame and is achieved through distancing oneself from one's own work, allowing for constructive feedback from oneself, peers, and teacher, leading to transformation. An example of fostering recursive reflection in the foreign language classroom may involve the use of self-evaluations and language portfolios. Self-evaluations allow students to distance themselves from their work in order to think about their learning and language portfolios provide the opportunity to reflect upon samples of their language production. Allowing students to take part in peer-review and editing also allows for reflective recursion to emerge. Such recursive reflection on the student's part may lead to greater awareness of their learning and transformation.

Doll's need for *relation*, emphasizes global interconnections, both pedagogically and culturally. Pedagogically, it is necessary to see the connections within the structures of the curriculum---such connections lend to the depth of the curriculum. Culturally, it is necessary to recognize a connectedness to one another. Rather than a competitive approach to learning, knowledge is co-constructed. This is essential to the foreign language curriculum that allows students to work together in creating meaningful dialogues, role-plays, or interviews in the target language. Relation is of utmost importance in regards to meaningful language exchanges, in that such exchanges could not exist without the "other" (Vygotsky, 1929). Language learning cannot develop in isolation; Meaning is created and transformed socially. Thus, Doll's push for a relational curriculum is especially integral to the oral aspect of language learning.

The example provided earlier of students asking about and describing family members to a partner may be extended further by asking students to then report what their partner said to the class. Such an example may be relational on several levels. Because the students would first need

to form questions and gather information from their partners in order to report about them, their initial interaction is social, requiring question formation, such as, "Do you have any siblings?/ *¿ Tienes hermanos? and "What's your brother like? / ¿Como es tu hermano?*. Only after the social interaction, could they describe another student's family members. Meaning in this regard is thus negotiated and co-constructed. The task is relational, requiring social interaction to create meaning. It is also relational in that the context may be related to the unit that the students are studying at the time, as well as related to something tangible in their own life.

Finally, *rigor* refers to a curriculum that is aware of hidden assumptions and attempts to reveal assumptions and create transformative meaning. It is grounded upon interpretation and indeterminacy. Again, this pertains to foreign language learning in that assumptions about the culture may be revealed and transformed. Take, for example, the use of idiomatic expressions in a given language and how they reveal truths about the culture. For instance, in Spanish, age is not expressed as a state of being as in English: "I *am* fifteen years old". Rather, age is perceived as a possession: "I *have* fifteen years" (*Yo tengo quince años*). Thus, culture in regards to how the world is perceived, is embedded within the language. Rigorous oral development in the foreign language curriculum will lead to speakers who are cognizant of the particular cultural and linguistic nuances pertinent to the language they are learning. Rigor is also provided in this study on another level, in that students' own assumptions about themselves speaking Spanish may be revealed in the beginning of the study, and possibly transformed by the end of the study.

The current study provides several speaking opportunities using Doll's (1993) four elements of richness, recursion, relation, and rigor in various contexts. For example, one of the CALL tasks involved students working together to first interview one another in the target language about their typical daily routine. They then individually recorded themselves talking

about their partner and telling what their partner's daily routine looks like. The context was designed to elicit responses that would include the grammatical structures of reflexive verbs and reflexive pronouns. For example, in English one would say, "She wakes up at six in the morning". In Spanish however, the use of reflexives would carry a literal translation of "She wakes *herself* up at six in the morning": *Ella se despierta a las siete de la mañana*. First, the activity began with using reflexives in the first-person. The activity then transformed into using reflexives in the third-person point of view, as the students described what their partner does as a daily routine.

Such an activity allowed for richness in that the result was a multiplicity of responses and interpretations based upon what the students decided to say and how they chose to create meaning together. It was relational pedagogically in that the curricular activity itself related to the overall curriculum of meanings and structures that were being presented in the current unit of study. It was relational socio-culturally in that students worked with a partner to create oral dialogues and make meaning, which then led to their recorded monologue; they would not have been able to arrive at the monologue without first connecting with and interviewing the "other." The activity was recursive in that students played back their recording as many times as they wished to listen to themselves speaking the target language---they were then able to reflect upon their language creations, and evaluate themselves. Thus, recursion occurred when the students reflected on their language production and recognized the importance of editing themselves---that their first response is not necessarily their last and that there is the possibility to change, add, delete, or transform their original response. Finally, this activity allowed for rigor in that it allowed students the opportunity to understand the cultural and linguistic nuances of the use of the reflexive grammatical structure, and how it functions in Spanish in contrast to English. The

aforementioned are just some examples of a post-modern curriculum for foreign language oral communication, using Doll's approach.

3.0 Problem Statement

A need exists for second language and foreign language teachers to consider a pedagogy that incorporates meaningful uses of CALL, serving as tool, medium, and tutor, on oral communication (Kern, 2006), grounded in SLA theory and Doll's post-modern framework. The present study seeks to examine the role of CALL combining its three functions (tool, medium, and tutor) within the foreign language context, as a means to assist students in developing their voice and identity in the target language. Building upon Chapelle's (2001) six criteria for designing CALL tasks grounded in SLA theory, this study employed all six (language learning potential, learner fit, meaning focus, authenticity, positive impact, practicality) criteria, as well as Doll's post-modern framework (richness, recursion, relation, rigor).

3.1 Research Questions

Four research questions guide this study:

1. How do CALL tasks grounded in SLA theory and Doll's post-modern framework elicit students' meaningful output related to specific areas of growth or weakness?

2. How do high school students perceive their experiences with CALL task voice-recordings to develop their Spanish oral proficiency?

3. What are the significant differences based on the scores students obtained for each of the CALL task voice-recordings from one to eight that determined students' Spanish oral proficiency?

4. How does CALL as tool, medium, and tutor, grounded in SLA theory and Doll's post-modern framework enhance high school students' Spanish oral proficiency.

3.2 Significance of the Study

This study contributes to the computer-assisted language learning literature by using technology as a tool, medium, and tutor for oral proficiency development in the high school

classroom setting. Respectively, oral proficiency development using this study indicates a need to incorporate Chapelle's six CALL criteria and Doll's post-modern framework to the foreign language curriculum---using technology in a way that is meaningful. Because voice-recordings over time show evidence on the improvement of oral proficiency, this study contributes to the Computer-Assisted Language Learning and Second Language Acquisition literature. Voice-recording CALL technology serves as a valuable tool for teachers to aid high school students' oral proficiency development in the foreign language classroom. Students' perceptions of the use of CALL providing insights into the positive ways learners have experienced CALL should inspire foreign language teachers to use CALL as tool, medium and tutor to improve oral language proficiency.

4.0 Methodology

4.1 Design

This study used the mixed approach, primarily qualitative and supported by quantitative, comprised of document analysis of voice-recording transcripts (Bird, 2005), post-intervention focus group interview (Krueger & Casey 2014), and students' written self-reflection journals (Morrow, 2005). Quantitative tests were used to measure improvement in student oral proficiency. The Friedman's test was used to analyze the eight different task scores (evaluated by the teacher) of the participants, and to determine whether any significant differences exist between the students' scores on Tasks 1 through 8. Further, the Mann-Whitney U test was used to compare the scores of the teacher's evaluations and the student self-assessments. Quantitative analysis was used to support the qualitative analysis.

4.2 Context of Study

This study took place in a parochial high school located in Gnomesville (pseudonym), MI. Students may live in areas up to twenty miles away. The high school accepts students across district boundaries. While it is a Catholic school, not all students who attend are Catholic. While tuition is comparable to the costs of neighboring Catholic high schools, the school offers scholarships, grants, and alternative options for students of lower income families.

4.3 Research Participants

The research participants comprised a class of 14 level-two group of Spanish students and their teacher. The 2015-2016 class was comprised of both high school-age boys and girls, approximately between the ages of 15 and 18. Their Spanish teacher was a 35-year-old African American woman with over 10 years of teaching experience. She was responsible for teaching levels two through AP, and identified herself as using a Communicative Approach. At the time of the study, she held a Bachelor's degree in Liberal Arts with a major in Spanish, and was certified to teach Spanish at the Secondary level.

4.4 Oral Communication Tasks

Task One

Students were asked to describe their typical daily routine, using reflexive verbs in the present tense. An example of a morning routine is as follows: "I wake up at six, wash my face, brush my teeth, and get dressed. I eat breakfast, and then I go to school."

Task Two

Students began by working with a partner to inquire about their partner's typical daily routine. They then created a recording describing their partner's daily routine, using reflexive verbs and the subject pronoun *he* or *she*. An example of the partner questions would follow as, *"What time do you wake up? Then, what do you do? What time do you go to school?"* After

getting information from their partner, a possible response for the recording may be, *"John wakes up at 6:30, brushes his teeth and gets dressed. He goes to school at 7:30."*

Task Three

Students read and listened to a textbook dialogue at the end of their chapter, between "Pablo" and "Rafael," discussing their thoughts on camping. The students then needed to explain why Pablo likes camping, using the present tense, target vocabulary and details from the conversation. A possible response would follow as, *"Pablo likes to camp with friends. He likes nature and they put up a tent and sleep int heir sleeping bags. He also likes to take walks and swim in the lake with his friends, but he doesn't like washing up with cold water. "* The script translation of the dialogue from the textbook is as follows:

> Rafael: *You like camping a lot, right?*
> Pablo: *Yes, I do.*
> Rafael: *The truth is that it isn't very interesting for me. Where do you sleep? Do you fall asleep in the open air?*
> Pablo: *No. I always go with one or two friends, and we put up a tent. And we sleep in a sleeping bag*.
> Rafael: *What do you do to eat?*
> Pablo: *Very easy. We prepare hamburgers and sausages on the barbecue.*
> Rafael: *There are a lot of insects, right?*
> Pablo: *Well, there are. But, come on! They don't bother us.*
> Rafael: *How do you pass the rest of the day? Aren't you bored?*
> Pablo: *On the contrary. We take walks and swim in the lake. We go to bed early because we also get up early.*
> Rafael: *It seems to me that you wake up when the sun wakes up.*
> Pablo: *Yes, but it doesn't bother me because I'm a morning person. But there is one thing that I don't like.*
> Rafael: *Really? What?*
> Pablo: *Washing myself in cold water.*

Task Four

The students were given a possible reality-based scenario. In this scenario, they were taking a train trip to visit their cousins in California. They had two hours to pass while waiting at the train station, and called their mom to pass the time. Their mom wants to know what the train

station is like. They were given pictures of the train station and had to describe the images using vocabulary that was learned in this unit. Responses would include present and possibly preterite tenses. For example, *"Hi mom, I am at the train station. The hall is very big and there are a lot of people. There is a schedule, vending machine, and kiosk. I bought a magazine to read while I wait. I already bought my round-trip ticket. The employee was very nice. My train departs in two hours."*

Task Five

Students were given a reality-based scenario in which they were traveling to Canada by train to visit their cousins. In this scenario, a friend asked them specific questions about their upcoming trip. The teacher played the role of the friend, asking five questions. The students were not given the questions in advance. They had to rely on their listening skills to understand the questions in order to create their response. This task, incorporating the need to exercise listening skills, was modeled after the AP Spanish Exam. The five questions were:

1. *Do you have a one-way or round-trip ticket.*
2. *Do you have to change trains?*
3. *Do you have a first-class or second-class ticket?*
4. *Are you going to eat in the cafeteria car?*
5. *At what time do you board the train?*

Students then recorded their responses to each question. An example might follow:

1. No, I have a round-trip ticket.
2. No, I don't have to change trains.
3. I have a first-class ticket.
4. Yes, I am going to eat in the cafeteria car.
5. I board the train at 7:30 tomorrow evening.

Task Six

Students were given a reality-based scenario involving a friend who was absent from school that day. The friend called the student and wanted to know what he or she missed.

Students had to answer the friend's questions using complete sentences, the past tense, and as much detail as possible. The teacher played the role of the friend asking the following questions:

1. *Did you watch a movie in history class?*
2. *Did Mrs. Smith collect the homework?*
3. *What did you read in literature class?*
4. *How was science class?*
5. *Did you take the test in math class?*

An example of their responses would be:

1. *Yes, I watched a movie in history class. It is very interesting.*
2. *Yes, Mrs. Smith collected the homework.*
3. *In literature class, I read The Crucible.*
4. *Science class is very boring. We only did a worksheet.*
5. *Yes, we took the test in math class. It's very easy*

Task Seven

Students created an individual recording describing their favorite restaurant and identifying some of their favorite foods served at the restaurant. An example of their recording would be, *"My favorite restaurant is Pizza Papalis because they have the best pizza and salad. It is a little expensive for me, so I don't eat there often. It is a good place to go with friends for a special occasion. Also, the waiters are nice."*

Task Eight

The students were each given four images of different types of food. They then had to identify the food and indicate how frequently they eat that type of food. In this case, the teacher looked for the use of both target vocabulary, and proper usage of adverbs of frequency. An example would be, "*I never eat lobster. I don't like it and it is too expensive."*

For a summary of the eight-CALL communication tasks and associated elements and the timeline of activities, see Table 2.1.

Table 2.1 CALL Communication Tasks and Timeline

Weeks	ACTFL National Standards	Context	Grammar Structures	Grouping
10/08/2015	1.3, 4.1, 5.2	Daily routine of self	Reflexive verbs using *I*	Individual
10/15/2015	1.1-1.3, 4.1, 5.2	Daily routine of other	Reflexive verbs using *he/she*	Partner/Individual
10/22/2015	1.1-1.3, 3.2, 4.1 5.2	Activities/ items for camping	Express like/dislike, present	Individual
10/29/2015	1.2, 1.3 2.1, 2.2, 5.2	Train station description and interactions	Present, near future, preterite	Individual
11/05/2015	1.1,-1.3, 4.1, 5.2	Train station interactions	Irregular verbs, need, present, near future	Partner/Individual
11/12/2015	1.1-1.3, 4.1, 5.2	Past tense to describe activities done at school	Preterite using *I*	Partner/Individual
11/19/2015	1.2,1.3, 5.2	Favorite restaurant	Express preference, present	Individual
12/03/2015	1.2, 1.3, 5.2	Food items and frequency	Like/dislike, frequency, present	Individual

4.4.1 Spanish Curricular Tasks Guided by SLA Theory and Post-modern Framework

Spanish oral communication tasks were tailored according to Chapelle's (2001) six criteria (language learning potential, learner fit, meaning focus, authenticity, positive impact, practicality) merging SLA theory with CALL, and Doll's (1993) four elements (richness, recursion, relation, and rigor) of a post-modern curriculum. What follows is a thorough discussion of one CALL task framed by Chapelle's (2001) six criteria and Doll's (1993) four elements.

Communication Task 6, for example, involves students describing a real or imaginary school day, using the preterite tense. Language learning potential is achieved through the possibility of reviewing and learning vocabulary associated within the context of school, and using language structures used to describe the past. Learner fit is achieved in choosing a topic (school) that is relatable and of interest to the age (mid-teens) of students. Also, the goal of this task is commensurate with the level of learning (Spanish level II). Meaning focus is achieved in that while the goal is to describe the events that transpired in a school day using the past tense, the focus is not on grammar. That is, though the student may confuse the use of the preterite, and possibly mix it up with the indicative tense, the focus is on making meaning, not on perfect grammar usage. Authenticity is achieved in that this task is based in reality. That is, students talk about a past school day they've actually experienced, or they describe an imaginary past school day (one they wish had occurred). In either case, the task is based on reality or a potential reality. Positive impact is achieved in that students not only learn language, but they also gain experience in expressing themselves in the target language. Therefore, they have the opportunity to develop their identity in the target language (Pierce, 1995). Finally, practicality is achieved in that the task of using voice-recording software may be easily implemented. Students may feasibly use computer-assisted language learning known as Audacity© to record, play back, listen to, and re-record their response as desired. Students may record as many times as needed within the period until they are satisfied with their final submission.

Manifestation of Doll's four elements is discussed. Richness is achieved through a creation of multiple meanings. That is, there is not just one objectively correct answer. Rather, students may create various responses that may achieve the goal of the task. One student may respond, "*Today, in literature class, we read 'Hamlet.' We had some questions to answer for*

homework, "while another student may respond, *"Literature class was fun. Mrs. Smith told us a funny story about her three-year-old son."* Recursion is achieved by giving students the opportunity to listen to their recording, reflect on their language production and add, edit, or delete something to transform their original response. This process allows students to produce what they consider to be their optimal voice product. Relation is achieved in that the context is relevant to their current unit of study. Further, the context is relevant to their life (school day they experienced or wish they experienced). It is also relational in that they are using vocabulary and structures *("Today, in literature class...")* they have previously learned in prior units. Finally, rigor is achieved through understanding cultural and linguistic nuances built into the language. For instance, taking the example of age described earlier, a student may respond, "*Mrs. Smith told us a funny story about her son who is three years old.*" A student that is cognizant of how age is perceived is aware that age is a possession, not a state of being. Thus, a proper translation would be, "...her son who *has* three years" as opposed to "...her son who *is* three years old."

Each task has been similarly designed to incorporate Chapelle's (2001) six SLA based on CALL criteria, and Doll's (1993) four elements of a post-modern curriculum. Table 2.2 provides a summary of the SLA theory and post-modern framework guided curricular tasks.

Table 2.2 SLA and Post-Modern Tasks

Elements of CALL framed by SLA Theory	**CALL Tasks**	**Post-Modern Framework (Doll)**
Language learning potential	Grammar/Structures: reflexive/irregular verbs, preterite, near future, need Vocabulary: daily routine, camping, train station, trip, restaurant	**Richness**: multiplicity of meaning, no absolute answer, open-ended responses **Relation:** task goals related to current and prior units of study **Recursion:** self-reflection/evaluation **Rigor:** task responses elicit

		awareness of Spanish cultural and linguistic nuances.
Learner fit	Relevant tasks (i.e. daily routine, camping, trips, restaurant) designed to fit interests, level, & age	**Relation:** context of tasks based on reality or potential reality of learner
Meaning focus	Tasks elicit meaningful response. Grammar built into response, but does not take precedence over meaning.	**Richness:** multiplicity of meaning, no absolute answer, open-ended responses **Relation: ta**sk goals related to current and prior units of study **Recursion:** self-reflection/evaluation
Authenticity	Tasks based in reality (i.e., daily routine, camping, trips, restaurant)	**Relation:** context of tasks based on reality or potential reality of learner
Positive impact	Beyond lang. learning, students develop identity and computer literacy	**Relation:** use of Audacity© related to AP use **Recursion:**self-reflection/evaluation

4.5 Audacity©

Audacity© is a free, downloadable, voice-recording software product compatible with PC or MAC operating systems. Currently, College Board suggests using Audacity for the oral portion of the AP foreign language exams. For instance, on the day of the AP exam, students use Audacity© to record their oral responses. They are able to save their responses to a file, which is then burned to a CD, and mailed to College Board for evaluation.

Below is a screenshot of Audacity©. The blue waves indicate the intonation of the voice that is being recorded. Students simply press the red circular button to begin recording. If they need to pause in thought, they may click the pause button indicated by the two blue lines. When they are finished with the recording, they may click the yellow square to stop. By clicking the green arrow, students may listen to their recording. When students are satisfied with their recording, they may click on “File” in the upper left corner to save their work.

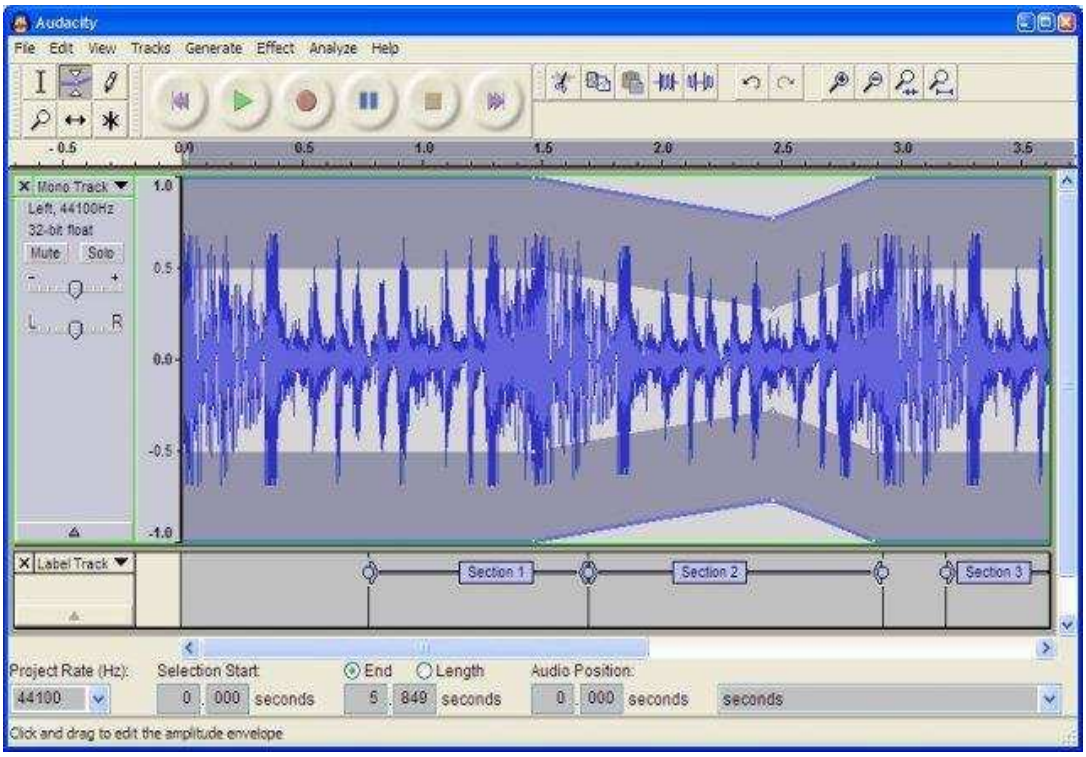

Figure 2.2 Audacity© Screenshot

4.5.1 Using Audacity© with Tasks

Using the software Audacity©, for the purpose of voice-recording, students of Spanish will record themselves based upon **authentically** designed tasks---that is, the tasks are reality-based. Creating a voice portfolio, these students are afforded the opportunity to self-assess and reflect upon their oral proficiency development over a period of eight weeks.

4.6 Data Collection

Data were collected to analyze any evidence provided by CALL-tasks in relation to high school student's Spanish oral proficiency. Data obtained from the post-intervention focus group interview, as well as from the self-reflective journals, were analyzed to interpret the qualitatively differing ways students perceive CALL-task voice-recordings to develop oral proficiency.

Students created a voice portfolio by recording eight oral communication tasks over an eight-week period. All recordings (8 x 14 =112; 1-3 minutes each) were collected through digital audio files.

The basis for the post-intervention focus group interviews was to gather data regarding students' perceptions of their ability to communicate in the target language. The post-intervention focus group interview consisted of 13 students. The number of students as participants in the post-interviews was dependent upon students' presence in school that day and availability; one student was absent on the day of the post-focus group interview.

Students also reflected in writing upon their perceived growth at the end of the eight-week period by listening to all of their voice-recordings in totality. Fourteen students completed a self-reflective journal that was collected by the teacher.

4.7 Data Analysis

Each digital audio file of the 112 total voice-recordings was transcribed verbatim and critically analyzed to look for evidence of oral language proficiency. The common themes derived from the transcripts of voice-recordings were analyzed to determine strengths and/or weaknesses in student products.

The analytic rubric (see Appendix A) used by the teacher to evaluate each student response was analyzed alongside the voice transcriptions to demonstrate any changes and/or growth in oral proficiency. Friedman's tests were run to find significant differences in the students' scores from Tasks 1 through 8. The Friedman's test was chosen because the following assumptions held true:

1. There were three or more groups (eight groups) that were being compared.
2. The data collected were in the form of a rubric assessment using an ordinal scale as awarded scores.

3. All observations were dependent random samples within groups since the same subjects were tested over the course of eight tasks.
4. The sample size was relatively small and therefore could not assume a normal distribution.

The objective of this particular comparison is to analyze the different task scores to determine whether a significant difference exists from task to task (Task 1, Task 2, etc.) as the treatment progressed throughout the course. The appropriate test in order to perform this comparison would be Friedman's test, which is a nonparametric version of the repeated measures ANOVA test. After running Friedman's Test and concluding that the task scores were significantly different from one another, a post hoc test was run to see if significant differences exist between each of the pairs of data sets. More specifically, this test was run to find a significant increase in the tasks scores as the students were given the next subsequent task (Task 1 to Task 2, Task 2 to Task 3, etc.) following an administered treatment. The appropriate test in order to perform this comparison would be the Wilcoxon Signed Rank test, which is a nonparametric version of the dependent t-test. The Wilcoxon Signed Rank test was chosen because the following assumptions held true:

1. The data collected was in the form of a rubric assessment using an ordinal scale as awarded scores.
2. All observations were dependent random samples within groups since the same subjects were tested over the course of eight tasks.
3. The sample size was relatively small and therefore could not assume a normal distribution.

Before proceeding with the pairwise post hoc tests, a Bonferroni Correction was performed, which reduces the risk of obtaining false-positive results (Type I errors). This is done by dividing the significance level by the number of pairwise comparisons being performed. In this case, the significance level of $\alpha = 0.05$ is divided by 7, since all subsequent pairs of tasks are being compared. The new critical p-value became p=0.05/7=0.0071.

The post-intervention focus group interview was transcribed verbatim and critically analyzed for common themes in students' responses about their perceptions of speaking Spanish and using CALL. Three themes were identified and the frequency of each theme's occurrence was counted and reported. Samples of students' utterances matching the themes were gathered as qualitative evidence.

Based on each self-reflective journal, themes were developed inductively and color-coded, and based on color-coding, common themes were established (Creswell, 2013). The same themes found in the post-intervention focus group interview appeared in the self-reflective journals and the frequency of each theme was counted and reported. Again, samples of students' written reflections matching the three themes were gathered as qualitative evidence.

Data analysis assisted in investigating how CALL as tool, medium, and tutor, grounded in SLA theory and Doll's post-modern framework, may help Spanish oral proficiency

4.8 Reliability and Validity Issues

Validity of this study was established by adopting several procedures suggested by Creswell (2013) such as prolonged engagement in the field, triangulation, disconfirming evidence, rich descriptions, and peer debriefing.

The credibility of this study was established by the researcher's collection of student voice-recordings, student self-assessments, and the teacher's evaluation of students over the period of eight weeks. The researcher worked in the school during the time of the study, allowing for prolonged engagement in the field. As a result, rapport and mutual trust were developed between the researcher, participating teacher, and participants. In fact, the researcher had been working as a colleague with the participating teacher for ten years.

Validity was also achieved by systematically collecting student voice-recordings and evaluations each week. To ensure that the findings were clearly linked to the data, the transcripts were translated into English, read repeatedly, and analyzed. Interpretations were subjected to a member check as they were shared with the participating Spanish teacher. Triangulation was achieved by corroborating data from multiple sources: voice-recordings, post- focus group interview, and students' self-reflective journals.

Validity was further established by searching for disconfirming evidence within the data, especially within the post-focus group interview and self-reflective journals. Any disconfirming evidence discovered by the researcher was identified and reported in the findings. Rich descriptions, providing detailed evidence of students' Spanish task recordings, post-focus group interview and self-reflective journals, were used.

Finally, peer debriefing occurred in that qualitative data analyses were shared with two peers external to the study to confirm the interpretations and analyses.

5.0 Results and Discussion

Based on the research questions, the following results are reported. First, qualitative results of students' CALL-task voice-recordings grounded in SLA theory and Doll's post-modern framework provide evidence for students' meaningful output related to specific areas of growth or weakness. Second, the qualitatively differing ways high school students perceive their experiences with CALL-task voice-recordings to develop Spanish oral proficiency are depicted. Third, significant differences based on the scores students obtained for each of the CALL-task voice-recordings from one to eight showing improvement on Spanish oral proficiency are provided. Fourth, how CALL, as tool, medium, and tutor, grounded in SLA theory and Doll's post-modern framework enhance Spanish oral proficiency of high school students is discussed.

5.1 Meaningful Output

Meaningful output includes correct and incorrect language usage, with a focus on creating meaning, adopting Chapelle's (2001) criterion of **meaning focus**. The meaningful output demonstrates the students' ability to understand the goals of the given task by producing language that involves attention to four major categories: *Vocabulary, Grammar, Pronunciation, and Message Content*.

The mean scores of all the participants for each task were calculated. Table 2.3 displays the mean score of all 14 students, from Tasks 1 through 8, as well as the frequency within each grouping (High, Mid, Low) for each task.

Table 2.3 Meaningful Output: High, Mid, Low

	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8
Mean	14.32	13.46	14.79	13.85	12.96	12.93	14.07	15.29
f High (15-16)	7	3	10	7	5	4	7	12
f Mid (12-14)	5	9	3	7	7	8	7	2
f Low (11-8)	2	2	1	0	2	2	0	0

The results indicate that the students mostly produced high- to mid-range meaningful output among all the tasks, with no low-range meaningful output in Tasks 4, 7, and 8. What is it about these tasks as opposed to the others that allowed all the students to produce a higher range of meaningful output compared to the rest of the tasks? Task 4 asked the students to view three images of a train station and describe it to their mom. Task 7 asked the students to describe their favorite restaurant and identify their favorite foods. Task 8 asked students to identify certain foods in images and tell how often they eat the food displayed in the given image(s). Perhaps it

is because these three tasks capture Chapelle's (2001) **learner fit**, using material that is relevant to learners' interests, level, and age. They created real or mental images of things (train station, restaurant, foods) that are actually tangible, fitting Chappelle's (2001) other criterion of **authenticity** (Bachman & Palmer, 1996; Lewkowicz, 2000). Learner fit and authenticity may explain what helped the students create higher-range meaningful output.

Examples of meaningful output representing high-, or mid- performance pertinent to Task 4 follows. In describing the train station to her mother, Laura produced the following utterance:

> *Hola Madre. El hall es muy largo con kioscos y distribudoras automático y mucho personas. Los pesejeres tienen maletas y boletos. Los kioscos tienen libros de debolisto. Al andén es muy grando. El tren es en la via. / Hi, Mother. The hall is very big with kiosks and automatic (not a word) and many people. The (not a word) have suitcases and tickets. The kiosks have books of (not a word). To the platform is very (not a word). The train is on the track.*

The message conveyed in Laura's utterance is *"Hi, mother. The hall is very big with kiosks and vending machines and many people. The passengers have suitcases and tickets. The kiosks have pocketbooks. The platform is very big. The train is on the track."*

Laura's meaningful utterance achieved a full score of 16 points.

A sample of mid-range meaningful output is evident in Luke's response to Task 4. He said:

> *Hola mama. El hall es muy grande. Hay muchas personas. Mi molesta el distribudor automático. El kiesko tiene los orribos boyos para los libros boyos. Me aburrida. El kieskos tiene las vistas. El andan a el trens y el hay trens. Las personas tienen el equipay. En el ventenia el employado es muy simpático. / Hello, Mom. The hall is very big. There are many people. The automatic (not a word) annoys me. The (not a word) has (not a word) for the (not a word) books. They bore me. The (not a word) have views. The platform to the trains and the there are trains. The people have the (not a word). At the (not a word), the (not a word) is very nice.*

Luke's meaningful response is as follows:

> *Hello, Mom. The hall is very big. There are many people. The vending machine annoys me. The kiosk has tickets for the arrivals. They bore me. The kiosks have windows. The*

train platform has trains. The people have baggage. At the window, the employee is very nice.

Luke scored 13 points, which put him in the mid-category. Detailed examples of students' meaningful output in Tasks 7 and 8 may be found in Appendix B.

After identifying the tasks that provided evidence of only high to mid-range meaningful output, the tasks with the lowest mean scores were identified. The mean for Tasks 2, 5, and 6, were 13.46, 12.32, and 12.92, respectively. The question to consider is *why* the scores of students' meaningful output was lowest among these three tasks. Task 2 required the students to first interview three other partners, and then report one of the partner's daily routine, using reflexive verbs in the third-person. Not only did they have to pay attention to how to properly form and use reflexive verbs (as in Task 1), but they also had the added complexity of framing their responses in the third-person. Task 5 required the students to answer a friend's five questions about an upcoming trip. Task 6 required the students to answer a friend's five questions about what he missed in school, using the preterite (past) tense. The common thread among all these tasks in contrast with the first three that were previously described is that the ideas are not tangible. Also, these three tasks required the students to first *listen* to another Spanish speaker before they could create a response. This added an element of complexity. While these tasks do fulfill Chapelle's (2001) requirement of learner fit, they require abstract thinking and complicated language usage. Amongst each of these tasks, the students created meaningful output at high, mid, and low levels, with the majority producing mid-range meaningful output.

In Task 2, which required the student to first interview three other students before reporting about one of the student's daily routines, using reflexive verbs and the third-person,

samples of high, mid, and low-range meaningful output were found. Sharon's high-range meaning output is as follows:

> *Marcel se desperte...desperta a las once. Come desayuno con su hermano. Después, se salia los dientes, y se lava la cara. Da una caminacta con sus amigos, y va a la hockey. Después, se ducho. Se mira en el ESPN y va al centro comercial con sus amigos. Se acuesta muy tarde a las once. / Marcel (not a word) at eleven. He eats breakfast with his brother. After, he (not a word) his teeth, and he washes his face. He gives a (not a word) with his friends, and he goes to hockey. After, he showers. He watches himself on ESPN and goes to the mall with his friends. He goes to bed very late at eleven.*

Sharon's created meaning is:

> *Marcel wakes himself up at eleven. He eats breakfast with his brother. After, he brushes his teeth, and he washes his face. He takes a walk with his friends, and he goes to hockey. After, he showers. He watches ESPN and goes to the mall with his friends. He goes to bed very late at eleven.*

She achieved a score of 16 points, placing her in the high range.

> Linda produced a sample of mid-range meaningful output with the following utterance:
>
> *Gina se despierta a _ once y media. Se pone _ pantalones y _ camiseta y se lava su pelo porque es bonita. Jena mira el Netflix y se acuesta a _ doce. / Gina wakes herself up at eleven thirty. She puts on pants and t-shirt and washes her hair because it is beautiful. Gina watches Netflix and goes to bed at twelve.*

The meaning conveyed in Linda's response is, *"Gina wakes herself up at eleven thirty. She puts on pants and a t-shirt and washes her hair because it is beautiful. Gina watches Netflix and goes to bed at twelve,"* having achieved a score of 14 points.

> Max produced the following low-range meaningful response:
>
> *Christian se despierta a la doce y media. Juan pone el camiseta y pantalones largos. El voy a la Partridge Creek con sus amigos. Juan se acuesto a la dos y media. Christian wakes himself up at twelve thirty. Christian puts on the t-shirt and long pants. He goes to Partridge Creek with his friends. Christian I put him to bed at two thirty.*

The meaning conveyed in his response is, *"Christian wakes himself up at twelve thirty. Christian puts on the t-shirt and long pants. He goes to Partridge Creek with his*

friends. Christian goes to bed at two thirty." Max's response earned a score of 11 points. For examples of students' meaningful output in tasks 5 and 6, see Appendix C.

The student samples are the evidence provided by the CALL oral task recordings of students' Spanish oral proficiency. The CALL-task oral recordings demonstrate the high, mid, and low-range meaningful output created by the students.

It was found that the highest frequency of the students' errors occurred from greatest to least in the following order: *Grammar and Structure, Expression and Vocabulary*, *Verb Conjugation*, and *Mispronunciation*. Figure 2.3 displays each category and the total frequency of each error type based on all eight tasks.

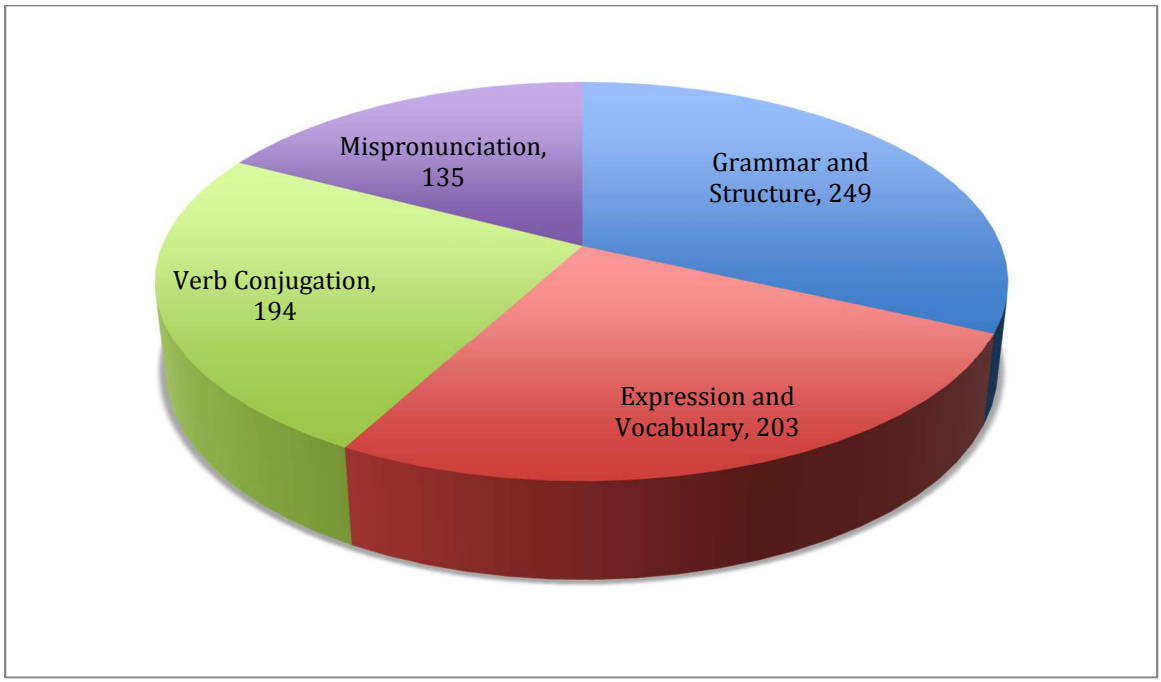

Figure 2.3. Category and Frequency of Student Errors on Eight CALL-Tasks

The purpose in identifying these areas of student error is to uncover any specific evidence of change and/or improvement over the course of the eight CALL-tasks. Interestingly, while some areas showed fluctuation, one area in particular, that of *Verb Conjugation*, resulted in a

steady decline of errors. Figure 2.4 displays the frequency of each category over the course of all eight CALL-tasks.

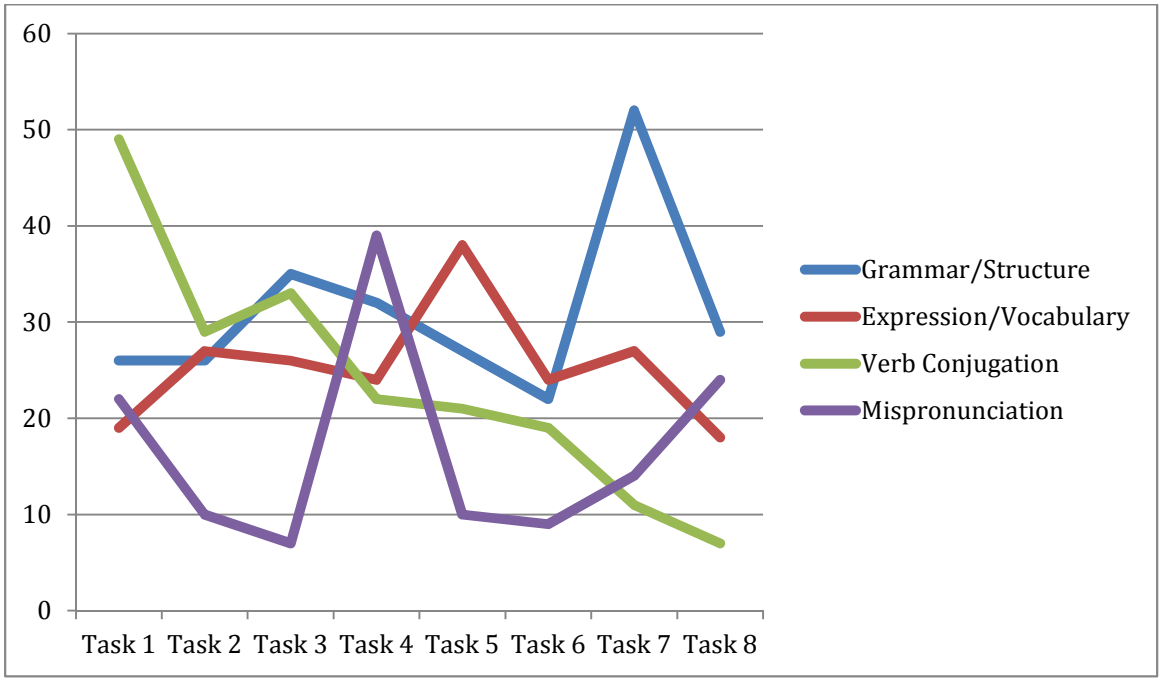

Figure 2.4. Frequency of Student Errors from Task 1 to Task 8

It is clear to see that while the other categories peaked and dropped at different points, respectively, throughout the eight-week study, errors in *Verb Conjugation* declined progressively (see Figure 2.4). To understand *why* the students made the most verb conjugation errors in Task 1, as opposed to the other tasks, it is necessary to take a closer look at Task 1. In this task, the students were asked to describe what they and others do on a daily basis. This task specifically centered upon the use of reflexive verbs, which always require the use of a reflexive pronoun. Thus, proper usage requires two steps of conjugation and selecting the appropriate reflexive pronoun. Upon analyzing students' responses, it was discovered that most of the verb conjugation errors either involved students leaving the reflexive verb in its infinitive form without conjugating it at all, conjugating the verb properly but omitting the reflexive pronoun, or simply incorrect conjugation of irregular reflexive verbs. It is important to keep in mind that this

was the *first* time the students were introduced to the topic of reflexive verbs. Therefore, it is expected that level-two Spanish students will make several verb conjugation errors when using reflexive verbs for the first time. Yet, even with these typical errors, students were able to construct meaning.

One student who generated a high frequency of such verb conjugation errors in Task 1 is Robert. He responded:

> *En la mañana, yo despertarse a la cinco y media. Yo ducharse y cepillete mis dientes. Yo ponarse mi uniforme y voy a la escuela. Después de la escuela, yo voy a mi casa y como cena. Yo [unintelligible] mis dientes y lavarse mi cara. Yo acostarse a las diez en la noche. / In the morning, I to wake himself at five in the morning. I to shower himself and brush yourself my teeth. I [not a verb] my uniform and go to school. After school, I go to my house and I eat dinner. I (to brush) my teeth, and to wash himself my face. I to go to bed at ten at night.*

Focusing solely on his verb conjugation errors (there are other types of errors), it is clear that he did not conjugate any reflexive verbs. As stated previously, reflexive verbs have two parts (conjugation into the correct form and correct change of the reflexive pronoun); however, Robert left the verbs in both the infinitive and the third person. He used an informal imperative command while referring to himself, likely by accident. Despite these verb conjugation errors, the meaning he created is: *"In the morning, I wake myself up at five thirty. I shower and brush my teeth. I put on my uniform and go to school. After school, I go to my house and eat dinner. I brush my teeth and wash my face. I go to bed at ten at night."* He earned a score of 14 points. For similar detailed examples of the students' utterances and explanations of their progressive drop in verb conjugation errors, see Appendix D.

5.2 Students' Perceptions of CALL-Task Voice-Recordings

Upon a qualitative analysis of the post-focus group Interview, which included 13 of the 14 participants, and the self-reflective journals, which included responses from all 14 of the

participants, the students' perceived experience of learning with CALL revolved around the following three themes: anxiety decrease, motivation and confidence increase, and speaking improvement

5.2.1 Theme One-Anxiety Decrease

In the post-focus group interview, of the 30 utterances pertaining to anxiety, 27 expressed a decrease in anxiety as a result of the CALL recordings. Thirteen of the 27 utterances attributed the decrease in anxiety to the ability to playback their recordings, find errors, and correct them. Five of the expressions explained that Audacity made it easier not only to speak, but to also speak in front of people, suggesting bi-modal transfer. Three of the expressions credited the use of Audacity with assisting in memory recall and fluency over time. Other expressions attributed the decrease in anxiety to the increased experience with speaking (*f*=3), not having to speak in front of class (*f*=2), and not having to speak loudly (*f*=1).

Similarly, in the self-reflective journal, out of the 79 total written reflections, 23 identified a decrease in anxiety attributing it to being able to re-record, learn from their errors, and recognize improvement. Only two of the 14 students reported no change in their anxiety due to the fact that from the onset, they felt little anxiety with speaking and the little anxiety they felt was based only on unpreparedness. For example, Danielle wrote, *"My anxiety hasn't really changed. I think it only depended on if I was prepared or not*." Aside from these two students, the majority of the group experienced anxiety towards speaking Spanish at the start, and reported a noticeable decrease in their anxiety by the end of the study.

5.2.2 Theme Two-Motivation and Confidence Increase

Regarding the motivation and confidence increase, all 13 students in the post-focus group interview reported that they felt more motivated to speak Spanish as a result of the CALL

recordings. Of the 21 total utterances on the topic of feeling more motivated, 13 of the comments attributed the increase in motivation to being able to listen to their recordings and use self-assessments. They explained that the self-assessments made them more aware of their individual errors and actually made them commit their errors to memory to improve going forward. Seven of the 21 remarks attributed their increase in motivation to the ability to hear and fix their errors. One of the students attributed her increase in motivation to the sense of accomplishment she felt as a result of the recordings, *"...it helped with my motivation because when she would tell us what to talk about, we had to think about it and I would, I would KNOW what I was saying, at times, so that made me feel like I KNEW what I was talking about and I knew how to say things and it just, it was better."*

Regarding the self-reflective journals, 15 of the 79 total written reflections identified an increase in motivation or confidence, stemming from the self-evaluations and an awareness of growth after listening to their previous recordings. Thirteen of the 14 students wrote about an increase in motivation and confidence. Only one student wrote that nothing changed with her motivation or confidence toward speaking Spanish because she never lacked confidence or motivation before. This is the same student who reported no change in anxiety due to never feeling anxiety towards speaking to begin with. Still, the majority of the students reported via the post-focus group interview and self-reflective journal an increase in motivation and confidence toward speaking Spanish by the end of the study.

5.2.3 Theme Three-Speaking Improvement

In the post-focus group interview, all 13 students reported that they noticed an improvement in their speaking ability by the end of the study. One student remarked,

> *"I feel like I've definitely improved in my ability because as others have said, with Audacity, you can go back and find your mistakes and also you can listen to yourself...*

> *you can go 'Wow, I need to improve here, here, and I was hesitating here and here, I screwed up a plural, and I used the masculine form instead of the feminine.' And so like, you can make mental notes. Then next time when you're talking, you'll be thinking about that and make a conscious effort to try to fix that."*

Of the thirteen remarks pertaining to improvement, six expressed that using Audacity allowed for creativity in their responses. Five of the thirteen remarks expressed the benefits of Audacity explaining that their speaking development transferred over into speaking at other times as well, including speaking in front of the class (Payne & Whitney, 2002). One student remarked on the time factor, explaining that he was able to improve more steadily since he did not have to wait for others to do their presentations (as in a traditional setting); He was able to record at his own pace. Another student explained that her pronunciation improved as a result of being able to listen to herself and re-record her responses.

The written reflections in the self-reflective journals echo the words of the students in the focus group interview. All 14 students perceived an improvement in their speaking ability, so much so that it appeared the most out of the three themes—41 out of 79 total written thoughts. Even the two students who had written that they had no anxiety towards speaking from the start still perceived growth in their speaking ability and attributed an awareness of that growth to the ability to listen to their past recordings. Table 2.4 displays the three descriptive themes of students' experience and perceptions of learning with CALL, discovered through the post-focus group interview and self-reflective journals. It details the frequency of each theme along with samples of the corresponding student expressions.

Table 2.4 Students' Experience/Perceptions of Learning with CALL based on Post-FGI and Self-Reflective Journal

Descriptive Categories of Students' Experience/Perceptions of Learning with CALL	*f*	***Example of Students' Expression- Post-FGI***	*f*	***Example of Students' Expression- Reflective Journal***

Anxiety Decrease	27	*"…since you can like rewind it, it's easier to find your mistakes and then fix them, and it has lowered my anxiety."* – Cynthia *"My anxiety level went down because one of the things is that you know you can go back and fix your mistakes, but also you're not waiting for someone else to uh present before you and you might be getting nervous about making sure you have what you are thinking to say in your mind. "* –Sharon *"I feel like my anxiety definitely decreased because I'm able to prepare better for what I'm saying and I know what I'm saying instead of just winging it and not going for anything, and I'm able to listen to it and re-do it, which makes me feel better about it."* -Nadine	*23*	*"I think my anxiety decreased towards speaking Spanish since the beginning of the semester because with each one I sound more comfortable and I could fix my mistakes...I feel more comfortable speaking Spanish now."* – Maggy *"My anxiety toward speaking Spanish has changed since the beginning. I definitely think my anxiety has decreased towards speaking Spanish."* -Theresa *"It has changed because I feel way more comfortable speaking in front of a crowd now than I did at the beginning of the year… I am more comfortable now than before."* -Max
Motivation and Confidence Increase	21	*"... it helped my motivation because when you can like see what you're saying and you can go back, you know what you need to fix, so you know that you have to like get better since I want to learn Spanish...because then like it's not just a teacher listening to you and grading on what they think. It's you critiquing yourself."* -Maggy *"...the self-evaluation did um boost my motivation because it like motivated me to fix my mistakes and it just also made me more confident and relaxed about what I was gonna say when I spoke Spanish."* –Jenny	*15*	*"I can have more motivation knowing I improve each week."* –Maggy *"I have become more confident while speaking. I think using Audacity definitely contributed to this because of the listening and re-recording."* –Linda *"I feel much more confident in my speaking Spanish, even*

		"I feel my motivation definitely went up because I could say like, I wanna hear myself speak the right way, and speak like I am a original Spanish speaker which is one of my goals also, and so, that's why the self-evaluation helped too, because it prompted me to grade myself on how I was speaking Spanish" -Nadine		*in front of a class...By listening to these recordings, I recognize my calmness as I progress."* –Sharon
Speaking Improvement	13	*"I think I improved because with Audacity, I like learned how to speak without preparing, so I can just say what's on my mind."* -Linda *"...I definitely improved because like Linda said, uh, I've become used to the language instead of just memorizing like specific sentences.* -Sharon *"It helped me... to speak my mind like, about like what, at the moment, and not like rehearse it and like double-think myself."* –Jenny *"I feel like it really helped me improve. I agree with uh, Laura, and uh everyone else. I um, think it helps to be in front of the computer because we can all present at once, and um, we're not sitting here waiting for everyone else to present, taking ideas from everyone else. We all have our own individual ideas, and that helps us to learn." -Robert*	41	*"I feel like my Spanish speaking skills have improved...listening to past recordings helped me to find common mistakes I was making."* –Luke *"I feel like recording my speaking activities, I wouldn't be able to hear how far I have come. I feel it [speaking] has improved. I can see where I have mistakes and work to improve them."* –Jenny *"I feel my ability to speak Spanish has greatly increased since I started. Going back helps me to find my mistakes."* –Robert *"I think it's good to be able to hear yourself and listen to the mistakes so you can go back and fix them. I also think my Spanish has improved a lot. Being able to listen to all my recordings lets me hear how I have grown."* -Danielle *-Re-recording helped me a lot. I felt I was able to fix mistakes and strive to record with no mistakes. My recordings help me to know*

				what to improve and definitely helped me improve." -Nadine

It is clear in both the post-focus group interview and self-reflective journals that the students expressed that the CALL recordings helped them develop their Spanish language oral proficiency through feeling more confident about speaking Spanish and allowing them the opportunity to perceive their growth through listening to their recordings and through making self-assessments; This allowed them to develop an awareness of their speaking ability, possibly creating more motivation toward speaking Spanish. The self-assessments were crucial in achieving Chappelle's (2001) criterion of **positive impact** and Doll's (1993) call for r**igor**. The self-assessments coupled with the ability to listen back to all their recordings, allowed the students to actually become aware of their perceived growth over time. This awareness and affective feeling of confidence and/or motivation towards speaking is a positive impact beyond the impact of language learning itself. Similarly, as **rigor** is defined as a revealing of assumptions and a movement toward transformation, it is clear that this transformation was achieved especially through using the self-assessments. Changes in the students' perceptions of themselves as less anxious, more confident speakers of Spanish are evidence of rigor, shown through their responses in the post-focus group interview and self-reflective journals. The students were able to uncover any hidden assumptions they held about themselves and how they feel about speaking Spanish--they were able to address their speaking goals, strengths, and weaknesses through the self-assessments, and they reported their own self-perceived transformations by the end of the study. This awareness of self-transformation is one of the benefits of using self-assessments.

It is evident that the students themselves discovered value in CALL by the end of the study, reporting twice over in the post-focus group interview and self-reflective journals, less anxiety and more confidence towards speaking, the advantage of the ability to listen to themselves, re-record, and reflect on past recordings, and a perception of self-improvement of speaking ability.

5.3 Audacity© as Tool, ACMC as Medium, Teacher as Tutor

We have reported the students' perceptions of the benefits of technology, grounded in SLA theory and post-modern framework. The final question to consider is whether or not there is any evidence that their own perceptions actually parallel their oral performance. In other words, did the students just *feel* better about speaking Spanish by the end of the study, or did they actually *perform* better as well? It was already demonstrated through the qualitative data that the students' verb conjugation errors decreased from task to task. Interestingly, the quantitative data supports this result as well. The results of each student's performance (based on the teacher's evaluations) from Task 1 to Task 8 were gathered, and quantitative tests were run to find any significant difference in their scores over the course of the study. Too, the same quantitative tests were run to determine whether any significant difference existed between the students' self-assessments and the teacher's evaluations. The results would determine whether or not the students' self-assessments were a reliable source or whether the students may have been too generous with themselves.

According to the Friedman's test, the task scores were significantly different from one another. Next, post hoc tests were run to see if significant differences exist between each of the pairs of data sets. More specifically, tests were run to find a significant increase in the tasks scores as the students were given the next subsequent task (Task 1 to Task 2, Task 2 to Task 3,

etc.). The appropriate test to perform this comparison is the Wilcoxon Signed Rank test, which is a nonparametric version of the dependent t-test. Before proceeding with the pairwise post hoc tests, a Bonferroni Correction was performed, which essentially reduces the risk of obtaining false-positive results (Type I errors). This is done by dividing the significance level by the number of pairwise comparisons being performed. In this case, the significance level of $\alpha = 0.05$ is divided by 7, due to comparing all subsequent pairs of tests. The new critical p value then is p=0.05/7=0.0071.

Upon running pairwise post hoc tests, a significant difference (increase) was found between Task 7 and Task 8. Upon further analysis of the raw scores, the researcher intuitively found what appeared to be a significant difference between other tasks when measured against Task 8. Thus, more post hoc tests were run to find a significant difference (increase) between Task 2, 4, 5, 6, and 7, compared to Task 8; the results of the tests confirm that a significant difference exists. Table 2.5 below displays the p-value and z scores of Task 2, 4, 5, 6, and 7 when compared to Task 8.

Table 2.5 Quantitative Test Results

Task	*p-value*	*z score*
2	0.003	-2.969
4	0.007	-2.714
5	0.002	-3.076
6	0.003	-2.956
7	0.007	-2.701

In all of these examples, because the p-value is less than our Bonferroni Correction of $p = 0.0071$, and since the test statistic of z falls outside of the critical z values of $z = \pm 2.452$, H_0 must be rejected, concluding that there is a significant difference between the Task 2, 4, 5, 6, and 7 scores when compared to Task 8. Thus, based on the quantitative data, one may conclude that the CALL-tasks voice-recordings had a positive impact on high school students' Spanish oral

language proficiency. The tests reveal that the students did not simply perceive an improvement, but that they actually performed better by the time they reached task 8, confirming an improvement in their Spanish oral language proficiency over the course of the eight-week study.

Further, when comparing the scores of the teacher's evaluations and the students' self-assessments using the Mann-Whitney U test, no significant difference was found. This suggests that the students were not overly generous, nor too hard on themselves. Rather, they assessed themselves similarly to how the teacher evaluated them. This evidence defends the value of students' self-assessments in monitoring their own learning.

The combined qualitative and quantitative results suggest that incorporating Chapelle's (2001) six criteria and Doll's (1993) post-modern curriculum into the foreign language classroom has a positive impact on the students' development of Spanish oral language proficiency. Affectively, students reported either a decrease in anxiety or feeling more motivated and confident toward speaking Spanish. In addition, based on the student scores on the tasks, as they were assessed using the analytic scoring rubric, it was found that despite common speaking errors, students were able to make meaning, and statistically significant results of improvement were found by the time they reached Task 8. Such findings are in line with other studies that produced similar results, suggesting that repeated experience decreases anxiety and helps student performance (Baker & MacIntyre, 2000; Gardner, Smythe & Clément, 1979; Tanaka & Ellis, 2003).

Students also reported the value of self-assessments and listening back to their recordings, suggesting this aided them in recognizing their personal areas of strength and/or weakness. Self-assessment and reflection have been shown to aid students in awareness and

metacognition (Alderson, 2005; Chen, 2008; Little, 2007). The usage of both the self-assessments and the self-reflective journal proved to be an integral part of this study.

Based on the results of both oral language development and students' perceptions of positive impact on affective factors, it is found that the suggested model of centering the computer assisted language learning curriculum around the learner proves beneficial to the learner. Figure 2.5 displays the model that has been re-configured to include CALL as tool, medium, and tutor, matching the respective elements of this study: Audacity©, Asynchronized Computer Mediated Communication, and Individualized Teacher Feedback and Self-Assessment.

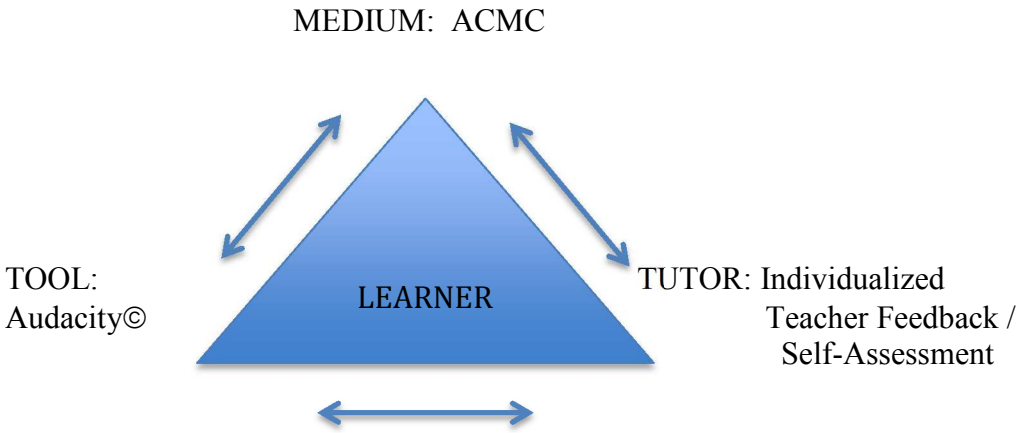

Figure 2.5 Learner-Centered CALL as Applied to the Study

6.0 Implications

The results suggest that the CALL oral task recordings, grounded in SLA through Chapelle's (2001) six criteria, and Doll's post-modern framework, help students develop Spanish oral language proficiency. More specifically, it is possible that CALL tasks designed with close attention to the two criteria of **learner fit** and **authenticity** may lead to increased student achievement. The first implication for teachers of foreign language then, is that CALL oral recordings (in addition to traditional oral assessments and daily oral practice in the classroom)

are beneficial to students' oral proficiency development when integrated into the curriculum. In line with Volle (2005), who used asynchronous voice-recorded assignments twice a week for one semester and found significant gains in oral proficiency, this study too employed asynchronous voice-recordings and found significant gains in oral proficiency as students moved from task to task. In contrast however with Hsu et al. (2000), who found that only students who practiced constantly developed oral proficiency by the end of study but still struggled with pronunciation, this study found significant gains in students' oral proficiency from task to task, as well as a steady decrease in the frequency of verb conjugation errors from tasks 1 through 8.

Further, the CALL oral task recordings provide evidence to the teacher and students of the students' oral performance. Such evidence may serve as a talking point between the teacher and student to address areas of strength and/or weakness. In contrast, traditional oral performances alone do not allow for such evidence that fosters such critical discussion, reflection, and transformation. With the teacher as tutor in this study, and based upon the results of students' oral proficiency development and transformation, this study agrees with Peters et al.'s (2009) findings indicating student preference for an individualized tutorial approach. Furthermore, this study is in line with others (Lynch & Maclean, 2003; Yang, Badger & Yu, 2007) who found that the instructor's feedback on learners' performance is integral to language learning.

Considering what the students said in the post-focus group interview and wrote in their self-reflective journals, it is important to note that it is not only the recordings that may have helped them. The majority of the students remarked upon the value of using self-assessments alongside the oral task recordings. The self-assessments helped them become aware of their speaking ability, and possibly could be the reason they reported feeling more comfortable and

more motivated towards speaking. Thus, teachers of foreign language ought to consider integrating a weekly oral recording accompanied by self-assessments to allow students the opportunity to, not only learn, but to *think* about their own learning. This thinking about their learning, as students commented, causes them to notice patterns in their strengths and weaknesses, and remember to address their mistakes in future oral performances. Their own awareness encourages them to take ownership of their work and provides the opportunity for transformation. It is asynchronous computer-mediated communication in the form of the oral-task recordings that allowed for the use of self-assessments. Students would not be able to accurately assess themselves in a traditional oral task done in real-time since they would not be able to both do the task and pay close enough attention to their utterance in order to properly assess themselves. Thus, in line with other CMC studies (Chapelle, 2009; Kern & Warschauer, 2000) concluding that synchronous and asynchronous activities provide more learner control, this asynchronous CMC study produces the same the finding.

Furthermore, based upon what the students said in the post-focus group interview and wrote in the self-reflective journals, having more learner control via the self-assessments allowed them to pay attention to their own patterns of errors and consciously make an effort to avoid them in the future recordings and when speaking Spanish in real time. Students expressed that doing the oral recordings helped them become better speakers in that they did not simply rehearse something; they reported an improvement in speaking Spanish naturally on the spur of the moment. Such results suggest a bi-modal transfer in that asynchronous computer-mediated communication through completing the oral recordings alongside the self-assessments, leads to improvement in natural oral communication. While Payne and Whitney (2002) found bi-modal transfer from synchronous computer-mediated communication to oral proficiency, this study

adds to the literature in that it used asynchronous computer-mediated communication and found evidence of bi-modal transfer.

The self-reflective journals allowed the students the opportunity to review all of their recordings in one sitting, and reflect on their possible growth. Whereas the self-assessments allowed the students to pay attention to their strengths and/or weaknesses on a singular level, dealing with one task at a time, the self-reflective journal allowed students to think about their growth as a whole, from Task 1 to Task 8. This led to their perceptions of personal growth with language and affective factors, such as less anxiety and more confidence towards speaking. Unlike other CMC studies (Hsu, Wong & Comac, 2008; Jepson, 2005; Jeon-Ellis, Debski, & Wigglesworth, 2005; Payne & Whitney, 2002; Volle, 2005), this is the only study that has employed post-modern framework, resulting in students' transformations in their own perceptions of themselves as Spanish speakers. Such results suggest that future CMC studies ought to adopt a post-modern framework for this purpose of transformation.

Too, recursion emerged in the current study through student self-assessments and reflections upon their oral development via maintaining the voice portfolio. Specifically, recursion occurred on three levels. First, the students listened to their initial recording and thought about their language production. This thinking about their own work led them to add, delete, change, and essentially transform their first response. In contrast, a real-time performance would not allow the opportunity to think about their language production at all, nor re-frame their response. Second, the students did not merely receive a grade from their teacher. Rather, they received constructive feedback about their individual language production and they also assessed themselves. Third, recursion occurred through the process of listening to all of their recordings cumulatively, at the end of the study, in order to think about their language

production altogether and reflect upon their transformation over the eight-week period. It is evident that this design fits Doll's explanation that recursion "aims at developing competence---the ability to organize, combine, inquire, use something heuristically" (p. 178). This lends to the argument that future CMC studies may benefit from employing a similar post-modern framework.

Considering that this study was conducted in just one semester of a second year Spanish course, and it reaped benefits for the students in such a small window of time, one may reason that if the CALL recordings occur throughout the academic school year, or further over the course of one's four-year high school period, the CALL oral task recordings may help students of foreign language develop oral proficiency moving closer to fluency. Thus, the study implies that the model of centering CALL as tool, medium, and tutor, centered around the learner, for a longer period of time than just eight-weeks, may lend to stronger positive impact. Foreign language classrooms may already be exercising daily oral practice and traditional oral assessments. However, the results of the study suggest that additional asynchronous computer-mediated oral practice may be needed to help students' oral proficiency development. Therefore, to optimize students' oral proficiency, this study suggests weekly CALL voice-recordings grounded in SLA theory and Doll's post-modern curriculum be integrated into the foreign language class. Further, students should complete self-assessments with each CALL voice-recording, as well as a reflective journal after each semester.

Another implication regarding policy is that schools need to be equipped with technology that supports such a curriculum. That is, schools need to provide computer labs with recording programs like Audacity©, along with the headphones with the attached microphone, that would allow a student to listen to and record their responses. In this regard, schools should have

technology personnel available to assist with supplying these needs, as well as instructing the students and teachers on how to use the technology.

Finally, professional development may be needed to instruct foreign language teachers how to design a curriculum that integrates CALL in such a way that benefits the students' oral proficiency. Particular professional development may be needed to understand how to implement Chapelle's (2001) six criteria and Doll's (1993) post-modern curriculum to create an effective CALL experience for the students.

7.0 Limitations

It is highly important to note that though the findings suggest that the CALL recordings helped develop Spanish oral proficiency, the sample size was quite small. Thus, it is recommended that additional research be conducted with a larger sample size to provide more power behind the results.

Secondly, thought the post- focus group interview provided insight matching the students' perceptions in the self-reflective journals, it may be beneficial to conduct a pre-focus group interview in order to account for any changes in students' perceptions over time. Furthermore, additional qualitative analyses via individual interviews may provide more in-depth results.

Too, this study was conducted with participants who had just begun their second year of learning Spanish at the high school level, and it only lasted for the duration of one semester (eight weeks). It may be beneficial to extend the study to one full year. Beyond that, stronger evidence may be found if the study followed the same students from their second year through their fourth year. The difficulty however in that length of time would be following the same group of students because the majority of high school students do not choose to proceed to the

fourth year of Spanish. Thus, it is recommended to first replicate this study for the duration of one full year to see if similar results are found.

Also, one student in the study revealed in his self-reflective journal that he didn't feel he had enough time in the class period to find value in the re-recording option afforded by the voice-recording software. Though only one student reported this, it is important to ensure that students in future studies are given adequate time to complete the task and re-record as needed. Future studies ought to control for the time allotted to the students to utilize the software, and ensure that they are given the same amount of time with each task as their feeling rushed could skew the results and defeat the purpose of incorporating a learner-centered CALL pedagogy.

Another limitation exists in that saving audio files did not work properly. The technology support director at the school had to be called upon to assist in making sure students could save their work. This troubleshooting took up some of the class time, but was resolved after the initial incident. Future studies must make sure all computers used are up to date and issues with saving files will not arise. Technology support personnel should test and confirm the process of saving the audio files on each computer before the students use them. The teacher and students should also be instructed on how to use the software and save audio files with a practice run before beginning the study.

Lastly, this study was conducted with participants who had just begun their second year of learning Spanish at the high school level, and it only lasted for the duration of one semester. It may be beneficial to extend the study to one full year. Beyond that, stronger evidence may be found if the study followed the same students from their second year through their fourth year. The difficulty however in that length of time would be following the same group of students because the majority of high school students do not choose to proceed to the fourth year of

Spanish. Thus, it is recommended to first replicate this study for the duration of one full year to see if similar results are found.

CHAPTER 3 (Article Two) THE EFFECT OF VOICE-RECORDINGS ON HIGH SCHOOL LEARNERS' SPANISH ORAL COMMUNICATION: CORRELATION BETWEEN ANXIETY AND ACHIEVEMENT

Abstract

The purpose of this mixed-method study is to determine the effect of computer assisted language learning (CALL) voice-recordings on high school students' anxiety and the correlation between anxiety and achievement. Two Spanish level-two classes were randomly assigned as experimental and control. While learning oral communication in the control group is typical, calling for oral assessment by the teacher in real time, students in the experimental group created an e-portfolio of his/her CALL voice-recordings using a series of real-world contextual tasks designed by Second Language Acquisition (SLA) theory and a post-modern framework. The Foreign Language Classroom Anxiety Scale (FLCAS) that measures state anxiety in a specific situation was used as the pre- and post-test to determine the effect of CALL on anxiety in Spanish oral communication for both groups. FLCAS data were collected and analyzed using Mann-Whitney U tests comparing both groups' anxiety levels. Mann-Whitney U tests were run to find significant differences in the experimental group's anxiety in comparison to the control group's anxiety, both pre-and post study. Pearson correlations were run to find that a strong correlation exists between post-FLCAS scores and students' achievement. Post-focus group interviews were conducted with students of both groups in order to corroborate the results of the FLCAS. The results of the post-focus group interviews and self-reflective journals show a decrease in anxiety by the end of the study, corroborating the negative correlation found between anxiety and achievement. The study implied that increased oral communication experience leads

to decreased anxiety, CALL oral tasks specifically help in decreasing anxiety towards speaking, and such decrease in anxiety leads to achievement on other assessments.

Key Words: achievement, anxiety, computer assisted language learning, foreign language anxiety, post-modernism, voice-recordings, high school learners, Spanish oral proficiency.

1.0 Introduction

Of the four foreign language general skills of reading, writing, listening, and speaking, Frantzen and Magnan (2005) and Matsuda and Gobel (2004) have found speaking to be the *greatest* source of anxiety among learners. The seminal article by Phillips (1992) found a negative relationship between foreign language anxiety and oral performance specifically. Since then foreign language anxiety researchers who have followed her work have consistently rendered the same results (Gregersen & Horwitz, 2002; Hewitt & Stephenson, 2012; Liu & Jackson, 2008; Zhang, 2004). More recently, Hewitt and Stephenson (2012) replicated Phillip's study extending the reliability, validity, and generalizability of her instruments and results. Based on the findings of the studies cited, it is evident that foreign language anxiety has a negative effect on oral communication.

While the studies cited above have consistently found a negative correlation between anxiety and oral communication, few studies actually used an intervention aimed at decreasing this anxiety (Gardner, Smythe & Clément, 1979; Baker & MacIntyre, 2000; Tanaka & Ellis, 2003). Gardner et al. (1979) have revealed a decrease in anxiety toward oral communication for university students of French after having enrolled in a **6**-week intensive course which involved all of the four language skills of listening, speaking, reading and writing. Baker and MacIntyre (2000) also revealed decreased anxiety toward oral communication and an increased willingness to communicate (orally) for high school students of French enrolled in an immersion program

that focused on usage of all the four language skills in solely the target language. Similarily, Tanaka and Ellis (2003), upon examining the effects of study abroad on the language anxiety of University-level Japanese students, concluded that language anxiety decreases after a 15-week semester abroad of intensive language learning. Based upon these studies, there is truth in the claim that increased experience and increased language competence lead to a decrease in language anxiety. Though Pichette's (2009) data contradicted previous studies in this matter, this current study proposes that the *kind* of increased experience and increased language competence may be what determines a decrease in language anxiety.

The aforementioned studies have shown promise at decreasing anxiety in oral communication based on interventions involving intensive learning environments such as immersion (Baker & MacIntyre, 2000;) and study abroad (Tanaka & Ellis, 2003). However, these studies are different from the current study in that, the study at hand proposes to enact an eight-week technology-embedded intervention for high school learners of Spanish. Further, this intervention is built into the curriculum so that it is not an additional course or program to take, nor does it require time spent abroad. Rather, it is seamlessly woven into the Spanish high school curriculum. This intervention advocates students creating a portfolio of his/her Computer Assisted Language Learning (CALL) voice-recordings using a series of real-world tasks designed by SLA theorists' frameworks (Chapelle (2001) and a post-modern framework (Doll, 1993) as a way to build confidence, find their "voice," and ultimately, decrease foreign language anxiety in the context of oral communication.

2.0 Theoretical Frameworks

This study anchors itself upon Horwitz, Horwitz, and Cope's (1986) conceptual model of foreign language anxiety, the second language acquisition theory (Chapelle, 2001) as in her

CALL study, and post-modern curriculum framework (Doll, 1993) to improve Spanish language proficiency and decrease foreign language anxiety.

2.1 Foreign Language Anxiety

Second language acquisition (SLA) educational researchers have situated the affective variable of anxiety in various theoretical frameworks. They cite Krashen's (1982) monitor model and the affective filter (Pichette, 2009), Burgoon's (1976) unwillingness to communicate (Liu & Jackson, 2008), Woodrow's (2006) adaptive language model (Pichette, 2009), Gardner's (1985) socio-educational model (Pichette, 2009), and Brophy's (1999) symptoms of perfection (Gregerson & Horwitz, 2002). However, most studies have used Horwitz, Horwitz, and Cope's (1986) conceptual model (Hewitt & Stephenson, 2012; Gregersen & Horwitz, 2002; Liu & Jackson, 2008). In fact, it was Horwitz et al. (1986) that first specified the existence of foreign language learning anxiety based on the psychological construct of state anxiety (Spielberger, 1983), which is situation-specific, manifesting the multi-faceted nature of foreign language learning (Horwitz, 2001; Horwitz, Horwitz, & Cope 1986; MacIntyre & Gardner, 1991a; Oh, 1990). These authors also posited that foreign language anxiety is unique to the situation of learning language in the classroom setting. The reason for foreign language anxiety is that foreign language study involves the greatest degree of self-concept and self-expression.

Horwitz, Horwitz, and Cope (1986), aptly define foreign language anxiety as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process" (p. 128), adding three main components, (a) communication apprehension, (b) test anxiety, and (c) fear of negative evaluation. These authors point out that communication apprehension involves a fear or anxiety toward communicating with other people. This can especially manifest itself within the foreign

language classroom context, as communication in the target language is the goal whenever possible. Test anxiety involves a performance anxiety that stems from the fear of failure, and students who have it usually demand more of themselves than they are actually able to achieve. Fear of evaluation causes students to avoid situations in which they may be evaluated, fearing that they will be evaluated negatively. Such students exhibit reluctance in initiating conversation and keep their interactions to a minimum (Gregersen & Horwitz, 2002).

MacIntyre and Gardner (1994) describe anxiety of foreign language learning as "the feeling of tension and apprehension specifically associated with second language contexts, including speaking, listening, and learning" (p. 284). These authors have confirmed student reluctance to initiate conversation by creating and testing nine different anxiety scales: French Class Anxiety Scale, English Class Anxiety Scale, Mathematics Anxiety Scale, French Use Anxiety Scale, Trait Anxiety Scale, Computer Anxiety Scale, State Anxiety Scale, Test Anxiety Scale, and Audience Anxiety Scale. Using each, they examined the relationship between various strands of anxiety and learning, finding that foreign language anxiety is distinct and different from general anxiety**,** thus affirming Horwitz et al.'s (1986) claim that foreign language anxiety is distinct. This study is, therefore, built upon Horwitz et al.'s (1986) conceptual theory that foreign language anxiety is distinct, and manifests itself in the forms of (a) communication apprehension, (b) test anxiety, and (c) fear of negative evaluation.

2.2 SLA Theory for the Design of CALL Tasks

Chapelle (2001), while recognizing the value in the study of SLA, also questions whether it is a field of chaos. Today's classrooms incorporate a mélange of theories, methods and approaches that the field has offered over the years; some grounded in structuralist and behaviorist psychology (Direct Method, Audiolingual Method), or Chomsky's cognitive

psychology (Cognitive Code Learning), and others considering the affective realm (Community Language Learning, Suggestopedia, the Silent Way, Total Physical Response, and the Natural Approach). Chapelle (2001) addresses a need to reduce chaos and make room for progress.

Her suggestion for securing order in the field is to align SLA theory with the design of CALL tasks. She has constructed six criteria for designing CALL tasks, each of them resting upon SLA theory and research. The first being **language learning potential**, resting upon the research of attention, focus on form, and negotiation of meaning (e.g., Doughty & Williams, 1998; Gass; 1997, Long, 1996; Pica, 1994; Robinson, 1995; Schmidt, 1990). The second, **learner fit**, takes into consideration learner style, interest, age and ability. Chappelle (2001) identifies Skehan's (1989) SLA research on individual differences as a complimentary fit. The third criterion is **meaning focus**, which places emphasis on the learner's attention towards meaning during language tasks. Here, Chappelle bases this upon the work of Pica, Kanagy, and Faludin (1993). The fourth criterion, **authenticity**, refers to the notion that the language task is based in reality, and could be something the student might encounter outside of the classroom (Bachman & Palmer, 1996; Lewkowicz, 2000). Fifth, the criterion of **positive impact** addresses the idea that the CALL task carries benefits beyond language learning, drawing upon theories of learner's identity (Pierce, 1995). The sixth criterion is **practicality**, which emphasizes the ease of application within the classroom setting. This list of criteria is useful for teachers who plan to use aspects of CALL in the classroom, and especially teacher-researchers aiming to design their own CALL study. The current study proposes a CALL and SLA curriculum integrating Chappelle's six criteria, but also pushing beyond the boundaries of the six criteria. The current study proposes that post-modern theory may contribute a greater depth that may be lacking in Chappelle's six criteria.

2.3 William Doll's Post-Modern Curriculum Framework

According to Doll (1993), the "[post-modern curriculum theory is] a fascinating, imaginative realm (born of the echo of God's laughter) wherein no one owns the truth and everyone has the right to be understood" (p. 151). In contrast, the modernist curriculum is one that is linear, predictable, closed–ended and non-constructive. Doll's conceptualization of the post-modern curriculum stresses the importance of self-organization, indeterminacy, stability through instability, order emerging spontaneously through chaos, and creative construction of meaning. Self-organization suggests a process that is open-ended, and non-teleological, guided by reflective action, interaction, and transaction. In order for self-organization to work, there must be a degree of turbulence. That is, something must trigger the self to re-settle itself after it has been challenged or perturbed (Piaget, 1980). It is this complexity or disequilibrium that leads to transformation. To reach these areas of self-organization and transformation, Doll asserts that the post-modern curriculum should be "rich, recursive, relational and rigorous" (p. 176).

Richness refers to multiple layers of meaning, multiple possibilities, and multiple interpretations. In order to achieve this, the curriculum must have a degree of chaos, disequilibrium, spontaneity, and lived experience. Applying this concept to oral communication in foreign language, richness may occur through meaningful dialogue and negotiating meaning. Providing students with opportunities to construct and co-construct language in contexts that relate to real-life for example, allows for a multiplicity of responses. For instance, if a certain unit revolves around themes of family and personal relations, having students communicate with a partner, asking about and describing their family members, would provide them with meaningful context and the opportunity to be creative with their language production. No two

students would produce the exact same results, yet together, they would negotiate and create meaning.

Recursion refers to the process of reflecting upon one's work, which leads to exploration of self and text. According to Doll, a transformative curriculum relies upon recursive reflection. It is recursive in that it allows for the realization that every ending leads to a new beginning, and every new beginning rises from a prior ending. It is important to note that recursion is not synonymous with repetition, which denotes a closed frame. Rather, recursive reflection implies an opened frame and is achieved through distancing oneself from one's own work, allowing for constructive feedback from oneself, peers, and teacher, leading to transformation. An example of fostering recursive reflection in the foreign language classroom may involve the use of self-evaluations and language portfolios. Self-evaluations allow students to distance themselves from their work in order to think about their learning and language portfolios provide the opportunity to reflect upon samples of their language production over time. Allowing students to take part in peer-review and editing also allows for reflective recursion to emerge. Such recursive reflection on the student's part may lead to greater awareness of their learning and transformation.

Doll's need for *relation*, emphasizes global interconnections, both pedagogically and culturally. Pedagogically, it is necessary to see the connections within the structures of the curriculum---such connections lend to the depth of the curriculum. Culturally, it is necessary to recognize a connectedness to one another. Rather than a competitive approach to learning, knowledge is co-constructed. This is essential to the foreign language curriculum that allows students to work together in creating meaningful dialogues, role-plays, or interviews in the target language. Relation is of utmost importance in regards to meaningful language exchanges, in that such exchanges could not exist without the "other" (Vygotsky, 1929). Language learning cannot

develop in isolation; Meaning is created and transformed socially. Thus, Doll's push for a relational curriculum is especially integral to the oral aspect of language learning.

The example provided earlier of students asking about and describing family members to a partner may be extended further by asking students to then report what their partner said to the class. Such an example may be relational on several levels. Because the students would first need to form questions and gather information from their partners in order to report about them, their initial interaction is social, requiring question formation, such as, "Do you have any siblings*?/ ¿ Tienes hermanos? and "What's your brother like? / ¿Como es tu hermano?*. Only after the social interaction, could they describe another student's family members. Meaning in this regard is thus negotiated and co-constructed. The task is relational, requiring social interaction to create meaning. It is also relational in that the context may be related to the unit that the students are studying at the time, as well as related to something tangible in their own life.

Finally, *rigor* refers to a curriculum that is aware of hidden assumptions and attempts to reveal assumptions and create transformative meaning. It is grounded upon interpretation and indeterminacy. Again, this pertains to foreign language learning in that assumptions about the culture may be revealed and transformed. Take, for example, the use of idiomatic expressions in a given language and how they reveal truths about the culture. For instance, in Spanish, age is not expressed as a state of being as in English: "I *am* fifteen years old". Rather, age is perceived as a possession: "I *have* fifteen years" (*Yo tengo quince años*). Thus, culture in regards to how the world is perceived, is embedded within the language. Rigorous oral development in the foreign language curriculum will lead to speakers who are cognizant of the particular cultural and linguistic nuances pertinent to the language they are learning. *Rigor* is also provided in this

study in that students' own assumptions about themselves speaking Spanish may be revealed in the beginning of the study, and possibly transformed by the end of the study.

The current study provides several speaking opportunities using Doll's (1993) four elements of *richness, recursion, relation*, and *rigor* in various contexts. For example, one of the CALL tasks involved students working together to first interview one another in the target language about their typical daily routine. They then individually recorded themselves talking about their partner and telling what their partner's daily routine looks like. The context was designed to elicit responses that would include the grammatical structures of reflexive verbs and reflexive pronouns. For example, in English one would say, "She wakes up at six in the morning". In Spanish however, the use of reflexives would carry a literal translation of "She wakes *herself* up at six in the morning": *Ella se despierta a las siete de la mañana*. First, the activity began with using reflexives in the first-person. The activity then transformed into using reflexives in the third-person point of view, as the students described what their partner does as a daily routine.

Such an activity allowed for richness in that the result was a multiplicity of responses and interpretations based upon what the students decided to say and how they chose to create meaning together. It was relational pedagogically in that the curricular activity itself related to the overall curriculum of meanings and structures that were being presented in the current unit of study. It was relational culturally in that students worked with a partner to create oral dialogues and make meaning, which then led to their recorded monologue; they would not have been able to arrive at the monologue without first connecting with and interviewing the "other." The activity was recursive in that students played back their recording as many times as they wished to listen to themselves speaking the target language---they were then able to reflect upon their

language creations, and evaluate themselves. Thus, recursion occurred when the students reflected on their language production and recognized the importance of editing themselves---that their first response is not necessarily their last and that there is the possibility to change, add, delete, or transform their original response. Finally, this activity allowed for rigor in that it allowed students the opportunity to understand the cultural and linguistic nuances of the use of the reflexive grammatical structure, and how it functions in Spanish in contrast to English.

The aforementioned are just some examples of a post-modern curriculum for foreign language oral communication, using Doll's approach. Due to a dearth of empirical data using Doll's post-modern framework, this current study employs a curriculum that is post-modern to both explore its potential benefits in relation to students' Spanish oral proficiency, and fill the gap in the current literature.

2.4 Foreign Language Anxiety Empirical Studies

While current research has focused on the debilitating effects of foreign language anxiety, some earlier studies suggest otherwise, finding either no relationship or a positive relationship between foreign language anxiety and achievement (Chastain, 1975; Kleinmann, 1977; Scovel, 1978). For instance, when Chastain (1975) studied the effects of test anxiety on overall language performance in elementary levels of French, German, and Spanish at an American University, he obtained mixed results. He found a statistically significant positive correlation between anxiety and performance in Spanish and a strong negative correlation in French. He attributed the negative results in French to the fact that the teacher used the **Audio-lingual** method, whereas the Spanish class was taught in a traditional style (focusing on grammar, rarely using oral communication). He also claimed that a certain amount of anxiety could be facilitating, while a certain amount could be debilitating. Too, Kleinmann (1977)

compared two different groups of English learners (at an American university), one involving native Spanish and Portuguese speakers, and the other consisting of native speakers of Arabic. His study used tasks designed to elicit oral responses in English using the passive, present progressive, infinitive complement, and direct object pronouns. He found that some English language learners would completely avoid structures that did not appear in their native tongue, while others with high levels of facilitating anxiety would actually try to implement these harder structures. In response to the aforementioned studies, Scovel (1978) concluded a type of anxiety existed that was indeed facilitating, implying some anxiety could actually be helpful to the foreign language learner. However, critics argue that reliable and valid measures were not available in the research of the 60s and 70s, which may have been the cause of some studies rendering positive results while others found negative results.

It was not until Horwitz et al. (1986) created the Foreign Language Classroom Anxiety Scale (FLCAS) that researchers began to discover consistent negative relationships between foreign language anxiety and language learning across the four skills--reading, writing, listening, and speaking. In fact, Horwitz (1990) speculates that there is no such type of foreign language anxiety that is facilitating. Subsequent research has corroborated the negative effects of foreign language anxiety on the general language learning skills (Bailey, Onwuegbuzie & Daley, 2000; MacIntyre & Gardner, 1994; Sparks & Ganschow, 2007). Other studies have discovered the negative relationship between foreign language anxiety and one specific language skill, such as listening (Kim, 2000; Vogely, 1998), speaking (Horwitz, 2001; Liu & Jackson, 2008; Zhang, 2004), reading (Saito, Horwitz, & Garza, 1999; Matsuda & Gobel, 2001), and writing (Cheng, Horwitz, & Schallert, 1999; Cheng, 2002).

One area of disagreement among researchers revolves around whether the foreign language anxiety that students experience is a cause of poor language learning, or if it is the effect of a language learning disability originating in the development of one's primary language (Sparks & Granschow, 1991). These authors' Linguistic Coding Differences Hypotheses (LCDH) suggest that foreign language anxiety is the effect of poor development in the native language. While this may be the case for some students, it cannot account for all students who experience foreign language anxiety (MacIntyre & Gardner, 1991a, b). These authors and Horwitz (2000) assert that the number of students with foreign language anxiety greatly exceeds the number of those with language decoding disabilities, and therefore insist that language anxiety exists independent of language disabilities. Further, MacIntyre and Gardner (1991a) explain that anxious students may engage in negative self-talk, ruminating over a poor performance. This, in turn, impedes students' ability to process information in the foreign language context. Thus, the negative effects of foreign language anxiety on language learning are dynamic and cyclical in nature. Students, therefore, need assistance in lowering anxiety, building self-confidence and establishing their own voice in the foreign language (Clément, Dörnyei, & Noels, 1994; Mak & White, 1997). While the majority of research has confirmed the negative effects of foreign language anxiety, this current study in line with other intervention studies (Gardner, Smythe & Clément, 1979; Baker & MacIntyre, 2000; Tanaka & Ellis, 2003), proposes a technology-embedded intervention to alleviate the foreign language anxiety experienced by students when facing oral communication.

It is evident that studies have long examined the effects of foreign language anxiety on the general skills, and have found the highest negative correlation between foreign language anxiety and oral proficiency. While this problem has been confirmed by empirical research, this

researcher's eleven-year experience as a foreign language teacher also attests to the problem. Over the past eleven years of teaching French, speaking has been the most difficult and most anxiety-producing skill for students.

3.0 Problem Statement

Based on the empirical studies as well as this researcher's teaching experience, anxiety with oral communication continues to be a problem for foreign language students. To date, however, there has not been any intervention study utilizing SLA theory, CALL, and post-modern framework to solve this problem. Thus, this study proposes to take a long-researched variable (anxiety) and apply it to a long-occurring and still current problem (oral proficiency), using today's technology (Audacity©) framed by post-modern SLA and CALL tasks to possibly solve the problem.

Several studies (Gregersen & Horwitz, 2002; Hewitt & Stephenson, 2012; Liu & Jackson, 2008; Zhang, 2004) have confirmed the negative correlation of foreign language anxiety on speaking alongside other skills. Hewitt and Stephenson's (2012) replication of Phillip's (1992) study, examined the effects of foreign language anxiety on only the skill of oral communication (isolating it from the other skills). However, since it dealt with a final oral exam, students may have had increased levels of test anxiety, aside from the communication component. This study at hand, in contrast, used frequent oral assessments (control group) and CALL voice-recordings (experimental group) over time as a measure to evaluate oral communication development of both groups of students. Each speaking task was assessed, but not as a test grade. Each was assessed utilizing an authentic assessment rubric (See Appendix A).

3.1 Research Questions

Four research questions guide this study:

1. After repeated experiences in speaking the foreign language, via CALL voice-recordings, will foreign language anxiety decrease in the experimental group of students as compared to the control group?
2. How do the students in the experimental group as a result of the CALL voice-recordings perform on a traditional real-time oral performance in front of the **class,** in comparison to the control group?
3. How do the students in the experimental group as a result of the CALL voice-recordings perform on the mid term exam, final oral exam, final exam, semester grade and end of year grade in comparison to the control group?
4. How do both experimental and control group of students perceive their anxiety levels and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessment, respectively?

3.2 Significance of the Study

Respectively, oral development using this study may show a need to incorporate a post-modern approach to the foreign language curriculum---using technology in a way that is meaningful. If voice-recordings over time reduce anxiety, this study may contribute to the Computer-Assisted Language Learning literature. Voice-recording technology might serve as a valuable tool for teachers to alleviate student anxiety in the development of oral communication in the foreign language classroom. Further, while most foreign language anxiety studies are quantitative in design (Liu & Jackson, 2008; Pichette, 2009; Sparks & Ganschow, 2007), this study will also incorporate qualitative analysis (Frantzen & Magnan, 2005; Hewitt &

Stephenson, 2012) to gain new perspectives on student anxiety. This study also aims to fill the gap of the few studies (Tennant & Gardner, 2004) that incorporate technology use and anxiety in language learning.

4.0 Methodology

4.1 Study Design

This study is a mixed-methods approach with an experimental (Campbell, 1963) design corroborated with focus group interviews (Krueger & Casey, 2014) and self-reflective journals (Morrow, 2005). The purpose of such an approach is to triangulate the data and add richness to the results that might be lacking otherwise (Johnson & Onwuegbuzie, 2004). Table 3.1 provides a conceptual view of the quantitative/qualitative design.

Table 3.1 Quantitative (pre- post-design) Corroborated with Interview

Group	Design	Variable	Sample	Qualitative Study (Post-Focus Group Interviews)
Teacher 1 Students (Experimental)	Pre/Post	Anxiety	N=14	N=13
Teacher 2 Students (Control)	Pre/Post	Anxiety	N=15	N=10

4.2 Context of Study

This study took place in a parochial high school located in Gnomesville (pseudonym), MI. Students may live in areas up to twenty miles away. The high school accepts students across district boundaries. While it is a Catholic school, not all students who attend are Catholic. While tuition is comparable to the costs of neighboring Catholic high schools, the school offers scholarships, grants, and alternative options for students of lower income families.

4.3 Research Participants

4.3.1 Students. The 29 research participants comprised two separate level-two Spanish classes. All participants comprised of high school-age boys and girls, approximately between the ages of 15 and 18. The experimental group comprised a class of 14 level-two Spanish students and their teacher, and the control group comprised a class of 15 level-two Spanish students and their teacher.

4.3.2 Teachers. The teacher of the control group was a 64-year-old white male with 35 years of teaching experience at the high school level, and 11 years of experience teaching at the university level. At the time of the study, he was a first-year teacher at the school and was responsible for teaching Spanish levels one and two. He held a Bachelor's degree with a major in Latin and a minor in Spanish, a Master's degree in Latin, and post-graduate credits in Spanish.

The teacher of the experimental group was a 35-year-old African American woman with over 10 years of teaching experience. She was responsible for teaching levels two through Advanced Placement, and identified herself as using a Communicative Approach. At the time of the study, she held a Bachelor's degree in Liberal Arts with a major in Spanish, and was certified to teach Spanish at the Secondary level.

4.4 CALL Communication Tasks Reflecting Post-Modern Framework

Task One

Students were asked to describe their typical daily routine, using reflexive verbs in the present tense. An example of a morning routine is as follows: "I wake up at six, wash my face, brush my teeth, and get dressed. I eat breakfast, and then I go to school."

Task Two

Students began by working with a partner to inquire about their partner's typical daily routine. They then created a recording describing their partner's daily routine, using reflexive

verbs and the subject pronoun *he* or *she*. An example of the partner questions would follow as, *"What time do you wake up? Then, what do you do? What time do you go to school?"* After getting information from their partner, a possible response for the recording may be, *"John wakes up at 6:30, brushes his teeth and gets dressed. He goes to school at 7:30."*

Task Three

Students read and listened to a textbook dialogue at the end of their chapter, between "Pablo" and "Rafael," discussing their thoughts on camping. The students then needed to explain why Pablo likes camping , using the present tense, target vocabulary and details from the conversation. A possible response would follow as, *"Pablo likes to camp with friends. He likes nature and they put up a tent and sleep int heir sleeping bags. He also likes to take walks and swim in the lake with his friends, but he doesn't like washing up with cold water. "* The script translation of the dialogue from the textbook is as follows:

> Rafael: *You like camping a lot, right?*
> Pablo: *Yes, I do.*
> Rafael: *The truth is that it isn't very interesting for me. Where do you sleep? Do you fall asleep in the open air?*
> Pablo: *No. I always go with one or two friends, and we put up a tent. And we sleep in a sleeping bag*.
> Rafael: *What do you do to eat?*
> Pablo: *Very easy. We prepare hamburgers and sausages on the barbecue.*
> Rafael: *There are a lot of insects, right?*
> Pablo: *Well, there are. But, come on! They don't bother us.*
> Rafael: *How do you pass the rest of the day? Aren't you bored?*
> Pablo: *On the contrary. We take walks and swim in the lake. We go to bed early because we also get up early.*
> Rafael: *It seems to me that you wake up when the sun wakes up.*
> Pablo: *Yes, but it doesn't bother me because I'm a morning person. But there is one thing that I don't like.*
> Rafael: *Really? What?*
> Pablo: *Washing myself in cold water.*

Task Four

The students were given a possible reality-based scenario. In this scenario, they were taking a train trip to visit their cousins in California. They had two hours to pass while waiting at the train station, and called their mom to pass the time. Their mom wants to know what the train station is like. They were given pictures of the train station and had to describe the images using vocabulary that was learned in this unit. Responses would include present and possibly preterite tenses. For example, *"Hi mom, I am at the train station. The hall is very big and there are a lot of people. There is a schedule, vending machine, and kiosk. I bought a magazine to read while I wait. I already bought my round-trip ticket. The employee was very nice. My train departs in two hours."*.

Task Five

Students were given a reality-based scenario in which they were traveling to Canada by train to visit their cousins. In this scenario, a friend asked them specific questions about their upcoming trip. The teacher played the role of the friend, asking five questions. The students were not given the questions in advance. They had to rely on their listening skills to understand the questions in order to create their response. This task, incorporating the need to exercise listening skills, was modeled after the AP Spanish Exam. The five questions were:

6. *Do you have a one-way or round-trip ticket.*
7. *Do you have to change trains?*
8. *Do you have a first-class or second-class ticket?*
9. *Are you going to eat in the cafeteria car?*
10. *At what time do you board the train?*

Students then recorded their responses to each question. An example might follow:

1. *No, I have a round-trip ticket.*
2. *No, I don't have to change trains.*
3. *I have a first-class ticket.*
4. *Yes, I am going to eat in the cafeteria car.*

5. I board the train at 7:30 tomorrow evening.

Task Six

Students were given a reality-based scenario involving a friend who was absent from school that day. The friend called the student and wanted to know what he or she missed. Students had to answer the friend's questions using complete sentences, the past tense, and as much detail as possible. The teacher played the role of the friend asking the following questions:

6. *Did you watch a movie in history class?*
7. *Did Mrs. Smith collect the homework?*
8. *What did you read in literature class?*
9. *How was science class?*
10. *Did you take the test in math class?*

An example of their responses would be:

6. *Yes, I watched a movie in history class. It is very interesting.*
7. *Yes, Mrs. Smith collected the homework.*
8. *In literature class, I read The Crucible.*
9. *Science class is very boring. We only did a worksheet.*
10. *Yes, we took the test in math class. It's very easy*

Task Seven

Students created an individual recording describing their favorite restaurant and identifying some of their favorite foods served at the restaurant. An example of their recording would be, *"My favorite restaurant is Pizza Papalis because they have the best pizza and salad. It is a little expensive for me, so I don't eat there often. It is a good place to go with friends for a special occasion. Also, the waiters are nice."*

Task Eight

The students were each given four images of different types of food. They then had to identify the food and indicate how frequently they eat that type of food. In this case, the teacher

looked for the use of both target vocabulary, and proper usage of adverbs of frequency. An example would be, "*I never eat lobster. I don't like it and it is too expensive."*

For a summary of the eight-CALL communication tasks and associated elements and the timeline of activities, see Table 3.2.

Table 3.2 CALL Communication Tasks and Timeline

Weeks	**ACTFL National Standards**	**Context**	**Grammar Structures**	**Grouping**
10/08/2015	1.3, 4.1, 5.2	Daily routine of self	Reflexive verbs using *I*	Individual
10/15/2015	1.1-1.3, 4.1, 5.2	Daily routine of other	Reflexive verbs using *he/she*	Partner/Individual
10/22/2015	1.1-1.3, 3.2, 4.1 5.2	Activities/ items for camping	Express like/dislike & present	Individual
10/29/2015	1.2, 1.3 2.1, 2.2, 5.2	Train station description and interactions	Present, near future, preterite	Individual
11/05/2015	1.1,-1.3, 4.1, 5.2	Train station interactions	Irregular verbs, need, present tense, near future	Partner/Individual
11/12/2015	1.1-1.3, 4.1, 5.2	Past tense to describe activities done at school	Preterite using *I*	Partner/Individual
11/19/2015	1.2,1.3, 5.2	Favorite restaurant	Express preference, present	Individual
12/03/2015	1.2, 1.3, 5.2	Food items and frequency	Like/dislike, frequency, present	Individual

4.4.1 Spanish Curricular Tasks using SLA Theory and a Post-modern Framework

Spanish oral communication tasks were tailored according to Chapelle's (2001) six criteria (language learning potential, learner fit, meaning focus, authenticity, positive impact,

practicality) merging SLA theory with CALL, and Doll's (1993) four elements (richness, recursion, relation, and rigor) of a post-modern curriculum. What follows is a thorough discussion of one CALL task framed by Chapelle's (2001) six criteria and Doll's (1993) four elements.

Communication Task 6, for example, involves students describing a real or imaginary school day, using the preterite tense. Language learning potential is achieved through the possibility of reviewing and learning vocabulary associated within the context of school, and using language structures used to describe the past. Learner fit is achieved in choosing a topic (school) that is relatable and of interest to the age (mid teens) of students. Also, the goal of this task is commensurate with the level of learning (Spanish level two). Meaning focus is achieved in that while the goal is to describe the events that transpired in a school day using the past tense, the focus is not on grammar. That is, though the student may confuse the use of the preterite, and possibly mix it up with the indicative tense, the focus is on making meaning, not on perfect grammar usage. Authenticity is achieved in that this task is based in reality. That is, students will talk about a past school day they've actually experienced, or they may describe an imaginary past school day (one they wish had occurred). In either case, the task is based on reality or a potential reality. Positive impact is achieved in that students not only learn language, but they also gain experience in expressing themselves in the target language. Therefore, they have the opportunity to develop their identity in the target language (Pierce, 1995). Finally, practicality is achieved in that the task of using voice-recording software may be easily implemented. Students may feasibly use Audacity© to record, play back, listen to, and re-record their response as desired. Students may record as many times as needed within the period until they are satisfied with their final submission.

Manifestation of Doll's four elements is discussed. Richness is achieved through a creation of multiple meanings. That is, there is not just one objectively correct answer. Rather, students may create various responses that may achieve the goal of the task. One student may respond, "*Today, in literature class, we read 'Hamlet.' We had some questions to answer for homework,* " while another student may respond, *"Literature class was fun. Mrs. Smith told us a funny story about her three-year-old son."* Recursion is achieved by giving students the opportunity to listen to their recording, reflect on their language production and add, edit, or delete something to transform their original response. This process allows students to produce what they consider to be their optimal voice product. Relation is achieved in that the context is relevant to their current unit of study. Further, the context is relevant to their life (school day they experienced or wish they experienced). It is also relational in that they will be using vocabulary and structures *("Today, in literature class...")* they have previously learned in prior units. Finally, rigor is achieved through understanding cultural and linguistic nuances built into the language. For instance, taking the example of age described earlier, a student may respond, "*Mrs. Smith told us a funny story about her son who is three years old.*" A student that is cognizant of how age is perceived will be aware that age is a possession, not a state of being. Thus, a proper translation would be, "...her son who *has* three years" as opposed to "...her son who *is* three years old."

Each task has been similarly designed to incorporate Chapelle's (2001) six SLA based on CALL criteria, and Doll's (1993) four elements of a post-modern framework. Table 2.4 provides a summary of the SLA and Post-modern framed curricular tasks.

Table 3.3 SLA and Post-Modern Tasks

Elements of CALL framed by SLA Theory	**CALL Tasks**	**Post-Modern Framework**

		(Doll)
Language learning potential	Grammar/Structures: reflexive/irregular verbs, preterite, near future, need Vocabulary: daily routine, camping, train station, trip, restaurant	**Richness**: multiplicity of meaning, no absolute answer, open-ended responses **Relation:** task goals related to current and prior units of study **Recursion:** self-reflection/evaluation **Rigor:** task responses elicit awareness of Spanish cultural and linguistic nuances.
Learner fit	Relevant tasks (i.e. daily routine, camping, trips, restaurant) designed to fit interests, level, & age	**Relation:** context of tasks based on reality or potential reality of learner
Meaning focus	Tasks elicit meaningful response. Grammar built into response, but does not take precedence over meaning.	**Richness:** multiplicity of meaning, no absolute answer, open-ended responses **Relation: ta**sk goals related to current and prior units of study **Recursion:** self-reflection/evaluation
Authenticity	Tasks based in reality (i.e., daily routine, camping, trips, restaurant)	**Relation:** context of tasks based on reality or potential reality of learner
Positive impact	Beyond lang. learning, students develop identity and computer literacy	**Relation:** use of Audacity© related to AP use **Recursion:**self-reflection/evaluation

4.5 Audacity©

Audacity© is a free, downloadable, voice-recording software product compatible with PC or MAC operating systems. Currently, College Board suggests using Audacity for the oral portion of the AP foreign language exams. For instance, on the day of the AP exam, students use

Audacity© to record their oral responses. They are able to save their responses to a file, which is then burned to a CD, and mailed to College Board for evaluation.

Below is a screenshot of Audacity©. The blue waves indicate the intonation of the voice that is being recorded. Students simply press the red circular button to begin recording. If they need to pause in thought, they may click the pause button indicated by the two blue lines. When they are finished with the recording, they may click the yellow square to stop. By clicking the green arrow, students may listen to their recording. When students are satisfied with their recording, they may click on "File" in the upper left corner to save their work.

Using the software Audacity©, for the purpose of voice-recording, students in the experimental group recorded themselves based upon authentically designed tasks---that is, the tasks were reality-based. Creating a voice portfolio, these students were afforded the opportunity to self-evaluate and reflect upon their oral proficiency development over a period of eight weeks in a reflective journal.

Audacity© has been installed on all the school computers in the media center at Chaby High School. Students use a special headset that has a microphone attached. Using Audacity©, they may click record, and speak into the microphone. They may stop the recording with another click. They are able to play back their recording, and decide whether or not it is to their liking. If not, they may re-record themselves. CALL as a tool may assist in both establishing the students' identity and voice as a target language speaker, improve their oral proficiency over time, and decrease their anxiety to communicate in the target language.

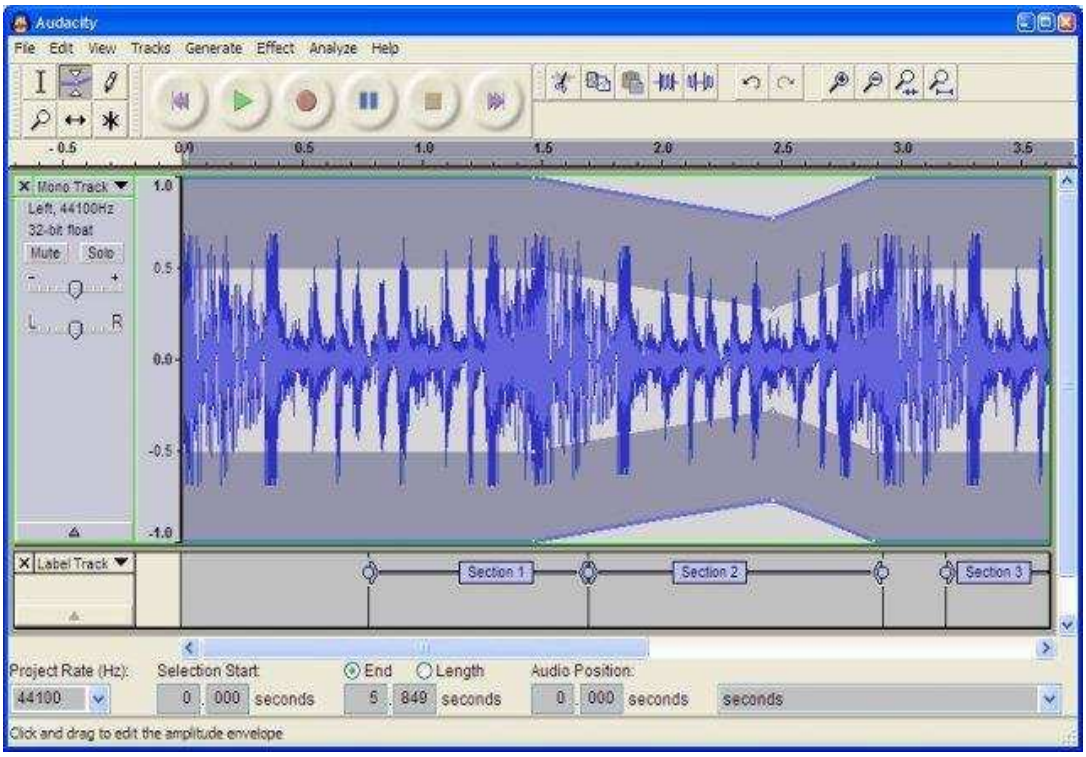

Figure 3.1. Audacity© Screenshot

4.5.1 Using Audacity© with Tasks

The curriculum in the classrooms of both the control and experimental groups is one that focuses on meaningful instruction. Both teachers incorporate all four communication skills (listening, speaking, reading and writing) in day-to-day activities. Grammar and pronunciation are not ignored, but are not the main focus. Meaningful communication is the goal for both teachers of Spanish. Therefore, both teachers frequently create scenarios for students to practice speaking Spanish, with a partner or group, engaging in dialogues and/or role-plays. The major difference, however, is that the experimental group added the use of the *Audacity* program to create voice portfolios. These portfolios enabled the students to record themselves speaking Spanish, and play back their recording, assess themselves, and re-record to their liking. They were able to track their development over the period of eight weeks and reflect back upon their

growth at the end of the study. This fits well into Doll's (1994) post-modern curriculum, being rich, rigorous, relational, and recursive.

4.6 Analytical Tools

The aforementioned three components of communication apprehension, test anxiety, and fear of evaluation, which comprise Horwitz's (1986) conceptual framework of foreign language anxiety, have also extensively appeared in the body of foreign language research. This conceptual framework of foreign language anxiety led to the creation of the FLCAS, a scale containing 33 items in a 5-point Likert-scale, in a self-report questionnaire format. Over the decades, the FLCAS has shown high internal reliability among several studies (Aida, 1994; Horwitz, 1986; Rodriguez & Abreu, 2003, Hewitt & Stephenson, 2012). With an alpha coefficient of .93 and an eight-week test-retest coefficient of .83, the FLCAS has been shown to be both reliable and valid (Horwitz, 1991; Horwitz et al., 1986).

A second analytical tool similar to Tennant & Gardner's (2004) "STA anxometer," was used to measure the experimental group's state anxiety in relation to using technology. Figure 3.2 is an example of the anxometer.

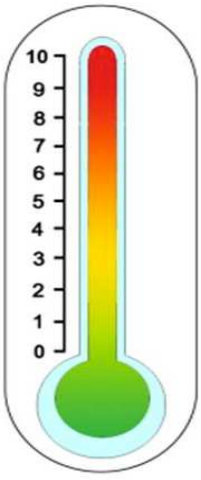

Figure 3.2 Anxometer to Measure State Anxiety

4.7 Data Collection

The experimental group used the *Audacity* software once a week, during a 50-minute class period, for the duration of the eight-week study, resulting in eight voice-recordings comprising each participant's voice portfolio. This group also completed a self-assessment for each voice-recording, and reflected upon their perceived growth at the end of the eight-week period in a reflective journal. The participating teacher also assessed the oral proficiency of each student for each activity. In contrast, the control group did not use Audacity, did not create a voice portfolio, and did not self-assess because they did not have a recording of themselves to listen back to in order to self-assess---this is one of the greater benefits of using Audacity rather than just presenting in real-time. Similarly, the control group could not reflect upon their oral proficiency development over time because their oral assessments were done in class, through oral dialogues and/or real-time presentations. That is, they were not able to play back their submissions, re-record, and reflect on their oral performance, because they were either individually presenting their oral communication in front of the class, or conducting a partner/group role-play.

A pre -and post- complete version of the FLCAS (Foreign Language Classroom Anxiety Scale) was given to the control and experimental groups.

Also, a pre- and post- modified version of the FLCAS containing only the items that pertain to oral communication were administered to the experimental group only (see Appendix E).

Being that class periods at the high school range between 35 and 50 minutes depending on the schedule for a given day or week, a portion of one class period was needed to administer the full FLCAS before and after the study. The shortened version of the FLCAS took much less

time and was administered to the experimental group on the day prior to their first recording, and the day after their final recording. Too, students in the experimental group completed a pre- and post- conceptual test similar to Tennant and Gardner's (2004) "anxometer," asking to measure their level of anxiety in relation to using technology in the foreign language classroom. It looks like a thermometer, and students drew a line anywhere on the thermometer to indicate the level of their anxiety.

Upon instruction from the researchers, the teachers administered the tests, collected, and returned them completed to the researcher.

The experimental group's teacher completed an evaluation for each experimental student's recording over the period of the eight-weeks and provided a copy of each evaluation point system and/or written. The control teacher also completed an evaluation for each student, with each task, using the same rubric as the experimental teacher. The rubric is qualitative in that thought it was based upon a point system, there was also room for written comments from the teacher in order to provide feedback to the student) for the researcher.

The experimental students also filled out their own self-assessment for each of their own recordings. The teacher collected the self-assessments at the end of each visit to the lab, and gave them to the researcher.

The quantitative results were corroborated with the results of the post-focus group interviews with 13 experimental and 10 control randomly selected students. These interviews elicited responses regarding anxiety in relation to oral communication in the target language, and foreign language learning in general. The qualitative results of the experimental group's self reflective journals were also considered alongside the information reported in the post-focus

group interview. These qualitative measures were taken to provide depth to the study and to uncover more data that quantitative measures alone may not reveal.

4.8 Data Analysis

The pre- and post-FLCAS scores between both experimental and control group were compared, testing for differences between both groups and within both groups pre- and post-study.

The scores between the experimental group's post-FLCAS and post-modified FLCAS tests were correlated to the oral midterm (December), midterm (December), oral final (June), final (June), traditional oral assessment, semester grade (December) and end of year grade (June). This provided a broad understanding of the effect of foreign language anxiety on a larger outcome. Running Pearson Correlations between the experimental group's post-FLCAS scores and the June scores also helped in finding whether or not the intervention produced lasting effects.

Isolating the oral communication questions on the FLCAS and administering those to only the experimental group allowed for analysis of the correlation between oral foreign language anxiety and the aforementioned grades in the course.

Analysis involved Pearson correlations. Pearson correlation is a measure of the degree of linear dependence between two variables in order to figure out if there is any correlation between student foreign language anxiety and their CALL voice-recordings based on post-modern tasks. A value of +1.0 and -1.0 reveals that the correlation is either positive or negative. If the value is 0, then there is no correlation, thus the closer the value is to +1 or -1, the stronger the correlation. Power analysis was also run to determine the strength of correlations that were found.

Excerpts from the post-focus group interview transcripts and self-reflective journals that relate to anxiety towards speaking the foreign language were selected and corroborated with statistical results.

4.9 Reliability and Validity Issues

The FLCAS is a 33-item scale, shown to be reliable and valid, with an alpha coefficient of .93 and an eight-week test-retest coefficient of .83 (Horwitz, 1991; Horwitz, 1986). Therefore, internal validity may be reached in this study. Because of the fact that this study utilized two Level-II Spanish classes of students who had registered for the academic year 2015-2016 by randomization, external validity is possible.

The full version of the FLCAS was administered to both groups pre- and post-, with plans to correlate the scores with final semester grades. Difference scores were to be analyzed and a reliability test would have been run using SPSS and raw scores in order to check the reliability against the sample in this study. However, a problem occurred in the data collection process initially which did not allow for this. The teachers, both control and experimental, did not match the FLCAS tests to the students properly upon collection, resulting in a completely randomized collection amongst both groups. Only the experimental teacher corrected this data collection process at the end of the study and was able to match post- FLCAS (full and modified) tests to the experimental students.

Using SPSS and the raw scores of the experimental and control group, reliability tests were run to obtain the cronbach alpha for each group's pre-and post-FLCAS tests. With an alpha coefficient of .973 (pre-FLCAS experimental), .954 (post-FLCAS experimental), .810 (pre-FLCAS control), and .803 (post-FLCAS control), the full FLCAS scale's reliability is proven in this study.

The experimental group was also given a shorter modified version of the FLCAS, containing only the items that pertain to oral communication. Because the FLCAS was cut down, a reliability test was run using SPSS and raw scores to obtain the cronbach alpha for the specific scales used. A reliability test was run and produced an alpha coefficient of .845 on the pre-FLCAS (modified) and .825 on the post-FCLAS (modified).

Further, the FLCAS scores obtained from the experimental group's post-tests were measured against final grades at the end of the year. This contributed to whether or not the intervention produced lasting effects.

Power Analyses were also run against the results of the Pearson correlations to determine the high or low power behind any significant correlations.

The qualitative aspect assisted in gathering rigorous, credible data that the FLCAS may not be able to measure. Validity, according to Creswell (2013), was established via prolonged engagement in the field, triangulation, disconfirming evidence, rich descriptions, and peer debriefing. The credibility of this study was established by the researcher's collection of student voice-recordings, student self-assessments, and the teacher's evaluation of students over the period of eight weeks. The researcher worked in the school during the time of the study, allowing for prolonged engagement in the field. As a result, rapport and mutual trust were developed between the researcher, participating teacher, and participants. In fact, the researcher had been working as a colleague with the participating teacher for ten years.

Triangulation was achieved by corroborating data from multiple sources: post- focus group interview, and students' self-reflective journals. Validity was further established by searching for disconfirming evidence within the data, especially within the post-focus group interview and self-reflective journals. Any disconfirming evidence discovered by the researcher

was identified and reported in the findings. Rich descriptions, providing detailed evidence of students' post-focus group interview and self-reflective journals, were used.

Finally, peer debriefing occurred in that qualitative data analyses were shared with two peers external to the study to confirm the interpretations and analyses.

5.0 Results and Discussion

Based on the research questions, the following results are reported. First, upon comparing the foreign language anxiety of the experimental group after repeated experiences in speaking the foreign language via CALL voice-recordings, to the foreign language anxiety of the control group, significant differences were found. Pearson correlations were run to find strong correlations between the experimental students' post- FLCAS (full) and post-FLCAS (modified) scores and midterm and semester grade.

Second, quantitative results of how the students in the experimental group as a result of the CALL voice-recordings perform on a traditional real-time test in comparison to the control group are reported. Third, quantitative results comparing the performance of the experimental group and control group on the mid-term exam, final oral exam, final exam, semester grade, and end of year grade are also reported. Fourth, the qualitatively differing ways the experimental and control group of students perceive their anxiety levels and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessment, respectively are reported.

5.1 Foreign Language Anxiety of Control and Experimental Students The Mann-Whitney U test compared the FLCAS results of the control and experimental groups. The objective of these particular comparisons is to analyze the different types of scores between the control group and

the experimental group, specifically, to find whether a significant difference exists between each of the administered scores between the control group and the experimental group.

First, a test was run to find any significant differences between the pre-FLCAS scores of both groups, testing the hypothesis at the α = 0.05 significance level. The following are the null and alternative hypothesis claims tested.

H_0: mean rank between the pre-FLCAS scores of the control and the experimental groups are identical.

H_1: mean rank between the pre-FLCAS scores of the control and the experimental groups are NOT identical.

Mean Ranks of the pre FLCAS scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	42.20	24.80

Since the p-value of 0.000 is less than the significance level of $\alpha = 0.05$ and the z score of -3.687 is outside the range of the critical values of ± 1.96, we must reject H_0, concluding that **there is a significant difference in pre FLCAS scores between the control group and the experimental group**. The mean scores show that the control students' foreign language anxiety was significantly higher than that of the experimental students at the start of the study.

Next, the post-FCLAS scores were compared between both groups. In this comparison, a test was run to determine whether there is a significant difference between the post-FLCAS scores of the control group and the post-FCLAS of the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested.

H_0: Mean rank between the post-FLCAS scores of the control and the experimental groups are identical.

H_1: Mean rank between the post-FLCAS scores of the control and the experimental groups are NOT identical.

Mean Ranks of the post FLCAS scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	44.50	22.50

Since the p-value of 0.000 is less than our significance level of $\alpha = 0.05$ and our z score of -4.665 is outside the range of our critical values of ± 1.96 we must reject H_0, concluding that **there is a significant difference in post FLCAS scores between the control group and the experimental group**. Thus, the foreign language anxiety of the control group remained higher than that of the experimental group at the end of the study.

Next, the pre- and post-FLCAS scores of the control group were tested to see if there was any decrease in their anxiety from the beginning of the study to the end. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims that we tested.

H_0: mean rank between the pre-FLCAS scores and the post-FLCAS scores of the control group are identical.

H_1: mean rank between the pre-FLCAS scores and the post-FLCAS scores of the control group are NOT identical.

Mean Ranks of the pre-FLCAS scores and post-FLCAS scores of the control group

	Pre-FLCAS score	Post-FLCAS score
Mean Rank	34.64	32.36

Since the p-value of 0.630 is greater than the significance level of $\alpha = 0.05$ and our z score of -0.482 is within of the critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in the pre FLCAS and post FLCAS scores of the control group. Thus, the control students did not experience a significant decrease in foreign language anxiety by the end of the study, although** the

qualitative results reveal most of the control students expressing a drop in their anxiety (to be elaborated in the final question).

Next, the pre- and post-FLCAS scores of the experimental group were compared to test whether there was a significant difference, and more specifically, to see if their anxiety decreased by the end of the study. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims that were tested.

H_0: Mean rank between the pre FLCAS scores and the post FLCAS scores of the experimental groups are identical.

H_1: Mean rank between the pre FLCAS scores and the post FLCAS scores of the experimental groups are NOT identical.

Mean Ranks of the pre FLCAS scores and the post FLCAS scores the experimental group

	Pre-FLCAS	Post-FLCAS
Mean Rank	37.58	29.42

Since the p-value of 0.084 is greater than the significance level of $\alpha = 0.05$ and the z score of -1.729 is within the range of the critical values of ± 1.96, we must fail to reject H_0, concluding **that there is not a significant difference in pre-FLCAS scores and post-FLCAS scores of the experimental group**. It is important to note however, that though a decrease above the 95% certainty alpha threshold did not occur, a decrease in anxiety with 92% certainty is evident. Also, qualitative data via the Post-Focus Group Interview demonstrates that the majority of students reported a decrease in their anxiety by the end of the study (to be elaborated in the last question). Based on the qualitative data, it is clear that the anxiety of the experimental group decreased; a larger sample size may render more statistically significant results.

5.1.1 Pearson Correlations of FLCAS Scores and Various Assessments

Pearson correlations were also run between the experimental group's post-FLCAS (full and modified) scores and the oral midterm exam grade, midterm exam grade, semester grade

(December), oral final exam (June), final exam (June), and end of year grade (June). A negative correlation was found between the full post-FLCAS scores and the oral midterm, suggesting that the lower a student's anxiety, the better they performed on the oral midterm, and similarly, the higher their anxiety, the worse they performed on the oral midterm. Negative correlations were also found between the post-FLCAS scores (full and modified) and the midterm exam grade, and semester (December) grade. That is, the lower a student's scores were on the FLCAS, the higher their score was on the midterm exam. Similarly, the post-FLCAS modified scores were correlated to the midterm exam, showing the lower the student's anxiety toward oral communication in Spanish, the higher they scored on the midterm exam. Pearson correlations also showed a strong negative correlation between the post-FLCAS scores and the semester grade. That is, the lower a student's anxiety, the higher their semester grade. Similarly, the lower their anxiety towards oral communication, the higher their semester grade. No correlations were found between the students' FLCAS scores and the June final exam and June end of year grades. Table 3.4 displays the Pearson correlations tests run between the post-FLCAS and post-modified FLCAS alongside the oral midterm, midterm, oral final, final, traditional oral assessment, semester grade, and end of year grade. Power Analyses were also run, revealing a high power of correlation between the post-FLCAS scores and the midterm and semester grade. Such powerful correlations are logical in that that these two assessments occurred directly after the study ended. Perhaps no correlations were found with the oral final, final, and end of year grades because the experimental students did not continue to do the CALL voice-recordings during the second semester.

Table 3.4 Correlations between FLCAS Scores and Assessments

	Post FLCAS	Post FLCAS *
Oral Midterm	$\boldsymbol{R = -0.539}$	$R = -0.404$

	$\boldsymbol{p = 0.047}$ **Correlated** $\boldsymbol{(1-\beta) = 0.595}$	$p = 0.151$ Not Correlated $(1-\beta) = 0.331$
Midterm	$\boldsymbol{R = -0.690}$ $\boldsymbol{p = 0.006}$ **Correlated** $\boldsymbol{(1-\beta) = 0.905}$	$\boldsymbol{R = -0.612}$ $\boldsymbol{p = 0.020}$ **Correlated** $\boldsymbol{(1-\beta) = 0.757}$
Oral Final	$R = -0.329$ $p = 0.273$ Not Correlated $(1-\beta) = 0.209$	$R = -0.192$ $p = 0.530$ Not Correlated $(1-\beta) = 0.099$
Final	$R = -0.294$ $p = 0.330$ Not Correlated $(1-\beta) = 0.174$	$R = -0.144$ $p = 0.638$ Not Correlated $(1-\beta) = 0.077$
Traditional	$R = -0.492$ $p = 0.074$ Not Correlated $(1-\beta) = 0.494$	$R = -0.420$ $p = 0.135$ Not Correlated $(1-\beta) = 0.357$
Semester Grade	$\boldsymbol{R = -0.746}$ $\boldsymbol{p = 0.002}$ **Correlated** $\boldsymbol{(1-\beta) = 0.970}$	$\boldsymbol{R = -0.604}$ $\boldsymbol{p = 0.022}$ **Correlated** $\boldsymbol{(1-\beta) = 0.740}$
End of Year Grade	$R = -0.338$ $p = 0.258$ Not Correlated $(1-\beta) = 0.33$	$R = -0.201$ $p = 0.510$ Not Correlated $(1-\beta) = 0.17$

5.2 Control and Experimental Groups' Traditional Real-Time Performance

In this comparison, a test was run to see if there is a significant difference between the traditional oral exam scores of the experimental group and the Task 8 scores of the control group. This hypothesis at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the traditional oral exam scores taken by the experimental group and the Task 8 scores taken by the control group are identical.

H_1: Mean rank between the traditional oral exam scores taken by the experimental group and the Task 8 scores taken by the control group are NOT identical.

Mean Ranks of traditional oral score of the experimental group and the Task 8 scores of the control group

	Control Group	Experimental Group
Mean Rank	13.33	16.79

Since the p-value of 0.271 is greater than our significance level of $\alpha = 0.05$ and our z score of -1.100 is within the range of our critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in scores between the control group and the experimental group**. Though a significant difference was not found, the higher mean rank of the experimental group in comparison to the control group indicates that the intervention did not harm or hinder the experimental students in any way.

5.3 Comparisons of Control and Experimental Students' Performance on Various Assessments

In this comparison, tests were run to see if there is a significant difference between the midterm exam scores of the control group and the experimental group. The hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the midterm exam scores of the control and the experimental groups are identical.

H_1: Mean rank between the midterm exam scores of the control and the experimental groups are NOT identical.

Mean Ranks of the midterm exam scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	17.27	12.57

Since the p-value of 0.123 is greater than the significance level of $\alpha = 0.05$ and the z score of -1.542 is within the range of the critical values of ± 1.96 we must fail to reject H_0, concluding that **there is not a significant difference in midterm exam scores between the control group and the experimental group**.

In the next comparison, tests were run to see if there is a significant difference between the final oral exam scores of the control group and the experimental group. This hypothesis was

tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims that we tested:

H_0: Mean rank between the final oral exam scores of the control and the experimental groups are identical.

H_1: Mean rank between the final oral exam scores of the control and the experimental groups are NOT identical.

Mean Ranks of the final oral exam scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	13.43	15.73

Since the p-value of 0.438 is greater than the significance level of $\alpha = 0.05$ and the z score of -0.775 is within the range of our critical values of ± 1.96 we must fail to reject H_0, concluding that **there is not a significant difference in final oral exam scores between the control group and the experimental group**.

Tests were then run to see if there is a significant difference between the final (June) exam scores of the control group and the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the final June scantron exam scores of the control and the experimental groups are identical

H_1: Mean rank between the final June scantron exam scores of the control and the experimental groups are NOT identical

Mean Ranks of the final June scantron exam scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	13.47	15.69

Since the p-value of 0.474 is greater than the significance level of $\alpha = 0.05$ and the z score of -0.716 is within the range of the critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in final June scantron exam scores between the control group and the experimental group**.

In the next comparison, tests were run to see if there is a significant difference between the semester 1 grades of the control group and of the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the semester 1 grades of the control and the experimental groups are identical.

H_1: Mean rank between the semester 1 grades of the control and the experimental groups are NOT identical.

Mean Ranks of the semester 1 grades of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	14.00	16.07

Since the p-value of 0.502 is greater than the significance level of $\alpha = 0.05$ and the z score of -0.671 is within the range of our critical values of ± 1.96 we must fail to reject H_0, concluding that **there is not a significant difference in semester 1 grades between the control group and the experimental group.**

In the last comparison, tests were run to see if there is a significant difference between the semester 2 grades of the control group and of the experimental group. This hypothesis at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the semester 2 grades of the control and the experimental groups are identical.

H_1: Mean rank between the semester 2 grades of the control and the experimental groups are NOT identical.

Mean Ranks of the semester 2 grades of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	12.67	16.62

Since the p-value of 0.184 is greater than the significance level of $\alpha = 0.05$ and the z score of -1.329 is within the range of our critical values of ± 1.96 we must fail to reject H_0, concluding

that **there is not a significant difference in semester 2 grades between the control group and the experimental group.**

In all of the aforementioned tests, though no significant difference was found between both groups' various assessments and grades, it is important to note that the intervention did not hinder the experimental students.

5.4 Experimental and Control Students' Perceptions of their Anxiety Levels

Upon a qualitative analysis of the experimental and control students' **post-focus group interview**, the focal descriptive category of students' experience and perceptions of learning with CALL was identified as *Anxiety Decrease.*

In the experimental post-focus group interview, which included 13 of the 14 participants, of the 30 utterances pertaining to anxiety, 27 expressed a decrease in anxiety as a result of the CALL recordings. Thirteen of the 27 utterances attributed the decrease in anxiety to the ability to playback their recordings, find errors, and correct them. Five of the expressions explained that Audacity made it easier not only to speak, but to also speak in front of people. Three of the expressions credited the use of Audacity with assisting in memory recall and fluency over time. Other expressions attributed the decrease in anxiety to the increased experience with speaking (*f*=3), not having to speak in front of class (f=2), and not having to speak loudly (*f*=1).

The students expressed that the CALL recordings helped them develop their Spanish language oral proficiency through feeling more comfortable about speaking Spanish and allowing them the opportunity to perceive their growth through listening to their recordings and through making self-assessments; This allowed them to develop an awareness of personal achievement in their speaking ability and feel less anxiety toward speaking Spanish. The self-assessments were crucial in achieving Chappelle's (2001) criterion of **positive impact** and Doll's

(1993) call for r**igor**. The self-assessments coupled with the ability to listen back to all their recordings, allowed the students to actually become aware of their perceived growth over time. This awareness and affective feeling of decreased anxiety and personal achievement towards speaking is a positive impact beyond the impact of language learning itself. Similarly, as **rigor** is defined as a revealing of assumptions and a movement toward transformation, it is clear that this was achieved through the post-interviews, and the self-assessments. The students were able to uncover any hidden assumptions they held about themselves and how they feel about speaking Spanish; they were able to address their speaking goals, strengths, and weaknesses through the self-assessments, and they reported their own self-perceived transformations by the end of the study. This awareness of self-transformation is one of the benefits of using self-assessments.

Upon the qualitative analysis of the experimental students' written self-reflective journals (post-study) regarding their perceptions of their experience with CALL-task voice-recordings, *all* of the 14 students responded positively about their experience, and 12 of the 14 students expressed a decrease in **anxiety.** It is evident that the experimental students themselves discovered value in CALL by the end of the study, reporting yet again (as in the post focus group interview), less anxiety.

Finally, regarding the qualitative analysis of the control students' **post-focus group interview**, which included 10 of the 15 participants, of the 12 utterances pertaining to anxiety, ten expressed a decrease in anxiety as a result of an increase of experience in speaking, knowing what to expect with grading due to the teacher's use of a rubric with each assessment, or due to becoming more comfortable around their peers. One of the 12 utterances expressed an increase in anxiety due to the teacher's strictness with grading, and one expressed no change in anxiety.

It is clear that the control students perceived the increased experience with speaking helped them develop their Spanish language oral proficiency through feeling more comfortable about speaking Spanish and experiencing less anxiety overall, supported by Chappelle's (2001) criterion of **positive impact**. While the intervention was intended to help the experimental group, it is clear that the CALL tasks themselves, designed by SLA and post-modern framework, impacted the control group's perception of their anxiety as well.

One major distinction however in the perceived decrease in anxiety is that in contrast with the control students who merely attribute the decrease to increased experience and knowing what to expect with the grading, the experimental students highlight the benefits of being able to become aware of their errors, fix their mistakes, and become better real-time speakers, suggesting a bi-modality transfer. This finding is in line with Payne and Whitney's (2002) study that found a bi-modal transfer from synchronous computer-mediated communication to oral proficiency. Table 3.5 displays the frequency of students' perceptions of anxiety decrease, and examples of their different kinds of expressions.

Table 3.5 Students' Perceptions of Anxiety Decrease

Descriptive Category of Students' Experience/Perceptions of Learning with CALL	*f*	*Example of Experimental Students' Expression-Post-FGI*	*f*	*Example of Experimental Students' Expression-Reflective Journal*	*f*	*Example of Control Students' Expression-Post-FGI*
Anxiety Decrease	27	*"...since you can like rewind it, it's easier to find your mistakes and then fix them, and it has lowered my*	*23*	*"I think my anxiety decreased towards speaking Spanish since the beginning of the semester because with each one I sound more*	*10*	*"In the beginning of the year, my--- my anxiety was pretty high because I wasn't really used to speaking that*

		anxiety." – Cynthia *"My anxiety level went down because one of the things is that you know you can go back and fix your mistakes, but also you're not waiting for someone else to uh present before you and you might be getting nervous about making sure you have what you are thinking to say in your mind. "* – Sharon *"I feel like my anxiety definitely decreased because I'm able to prepare better for what I'm saying and I know what I'm saying instead of just winging it and not going for anything, and I'm able to listen to it and re-do it, which makes me feel better about it."* -Nadine		*comfortable and I could fix my mistakes...I feel more comfortable speaking Spanish now."* –Maggy *"My anxiety toward speaking Spanish has changed since the beginning. I definitely think my anxiety has decreased towards speaking Spanish."* -Theresa *"It has changed because I feel way more comfortable speaking in front of a crowd now than I did at the beginning of the year… I am more comfortable now than before."* -Max		*much Spanish, like that often, but now that I've done numerous speaking activities, it's gone down a lot."* *-Thaddeus* *"I think mine went down because I wasn't really used to speaking Spanish in front of people at the beginning of the year, but now I'm more used to it." - Alice* *"Um, I feel mine went down a lot also just from doing more oral assessments, getting more comfortable, I guess." -Jack* *"I've gotten better throughout the different, each assessment, just as long as I kind of practiced more, I get used to it, which I feel better about each time doing it." - Terrell* *"My anxiety's definitely gone down a lot because I've become a lot*

						more comfortable with my environment and who was in my class." -Bernice

The combined qualitative and quantitative results suggest that incorporating Chapelle's (2001) six criteria and Doll's (1993) post-modern curriculum into the foreign language classroom has a positive impact on the students' development of Spanish oral language proficiency. Affectively, the experimental and control students reported a decrease in anxiety, though the experimental group's foreign language anxiety was significantly lower than the control group's, both pre- and post-study. Such findings are in line with other studies that produced similar results, suggesting that repeated experience decreases anxiety and helps student performance (Gardner, Smythe & Clément, 1979; Baker & MacIntyre, 2000; Tanaka & Ellis, 2003).

The experimental students also reported the value of self-assessments and listening back to their recordings, suggesting this aided them in recognizing their personal areas of strength and/or weakness. Self-assessment and reflection have been shown to aid students in awareness and metacognition (Alderson, 2005; Chen, 2008; Little, 2007). The usage of both the self-assessments and the self-reflective journal proved to be an integral part of this study, aiding the experimental students in perceptions of achievement and transformation.

Lastly, Mann Whitney U tests were also run to analyze the experimental students' perceptions of their anxiety based upon the pre- and post-Anxometer tests. The following are the null and alternative claims tested:

H_0: mean rank between the pre Anxometer scores and post Motometer scores of the experimental group are identical.

H_1 : mean rank between the pre-Anxometer scores and post-Motometer scores of the experimental group are NOT identical.

Mean Ranks of the pre-Anxometer scores and the post-Anxometer scores of the experimental group

	Pre Anxometer scores	Post Anxometer scores
Mean Rank	15.12	12.96

Since the p-value of 0.479 is greater than the significance level of $\alpha = 0.05$ and the z score of -1.422 is within the range of our critical values of ± 1.96, we must fail to reject H_0, concluding that there is not a significant difference in pre Anxometer scores and post- Anxometer scores in the experimental group. Though the post Anxometer mean rank scores show a decrease in anxiety from pre- to post-study, we must conclude the difference is not statistically significant. The post-focus group interview however upholds the students' perception of their decrease in anxiety post-study.

6.0 Implications

The results suggest that the CALL oral task recordings, grounded in SLA theory through Chapelle's (2001) six criteria, and Doll's post-modern framework, help students develop Spanish oral language proficiency and decrease students' anxiety towards speaking Spanish. Too, Pearson correlations suggest that decreased foreign language anxiety, based on the scores from the full FLCAS, and decreased oral foreign language anxiety, based on the scores from the modified FLCAS, are both linked to achievement. Such findings are in agreement with studies that have consistently found a negative relationship between anxiety and achievement (Frantzen & Matsuda, 2005; Matsuda & Gobel, 2004). The first implication for teachers of foreign language then, is that CALL oral recordings (in addition to traditional oral assessments and daily oral practice in the classroom) are beneficial to students' oral proficiency development when integrated into the curriculum. It is also suggested that traditional oral assessments themselves,

when designed according to Chapelle's (2001), help students experience a decrease in anxiety towards speaking, as reported by the control students. This finding too, is in line with previous studies (Baker & MacIntyre, 2000; Tanaka & Ellis, 2003) that assert increased experience leads to a decrease in foreign language anxiety.

Too, it is worth mentioning that the results of the pre- and post- FLCAS scores in both the control and experimental students, as well as the post-focus group interviews, reveal a presence of foreign language anxiety in the majority of the students. While the quantitative and qualitative data reveal a decrease in anxiety, the results of there having been anxiety to begin with confirms Horwitz's (2000) assertion that the number of students with foreign language anxiety exceeds the number of those with language decoding disabilities, confirming further that foreign language anxiety exists independent of language disabilities.

Further, the CALL oral task recordings appear to have a benefit over traditional oral assessments in that they provide evidence to the teacher and students of the students' oral performance. Such evidence may serve as a talking point between the teacher and student to address areas of strength and/or weakness over time. In contrast, traditional oral performances alone do not allow for such evidence that fosters such critical discussion, reflection, and transformation.

It is important to note that it is not only the recording feature that helped students, as the majority of the students remarked upon the value of using **self-assessments** alongside the oral task recordings; The self-assessments helped them become aware of their speaking ability, and possibly could be part of the reason they reported feeling less anxiety towards speaking. Thus, teachers of foreign language ought to consider integrating a weekly oral recording accompanied by self-assessments to allow students the opportunity to, not only learn, but to *think* about their

own learning. This thinking about their learning, as students commented, causes them to notice patterns in their strengths and weaknesses, and *remember* to address their mistakes in future oral performances. Their own awareness encourages them to take ownership of their learning and provides the opportunity for transformation.

Similarly, the self-reflective journals allowed the students the opportunity to review all of their recordings in one sitting, and reflect on their possible growth. Whereas the self-assessments allowed the students to pay attention to their strengths and/or weaknesses on a singular level, dealing with one task at a time, the self-reflective journal allowed students to think about their growth as a whole, from Task 1 to Task 8. This led to their perceptions of personal growth in speaking and less anxiety and towards speaking.

Too, **recursion** emerged in the current study through student self-assessments and reflections upon their oral development via maintaining the voice portfolio. Specifically, recursion occurred on three levels. First, the students listened to their initial recording and thought about their language production. This thinking about their own work led them to add, delete, change, and essentially transform their first response. In contrast, a real-time performance would not allow the opportunity to think about their language production at all, nor re-frame their response. Second, the students did not merely receive a grade from their teacher. Rather, they received constructive feedback about their individual language production and they also assessed themselves. Third, recursion occurred through the process of listening to all of their recordings cumulatively, at the end of the study, in order to think about their language production altogether and reflect upon their transformation over the eight-week period. The benefit of such recursion is apparent in the comments and reflections made by the experimental students in contrast with those of the control students. It is evident that this design fits Doll's

explanation that recursion "aims at developing competence---the ability to organize, combine, inquire, use something heuristically" (p. 178). This lends to the argument that future CALL may benefit from employing a similar post-modern framework.

Considering that this study was conducted in just one semester of a second year Spanish course, and it reaped benefits for the students in such a small window of time, one may reason that if the CALL recordings occur throughout the academic school year, or further over the course of one's four-year high school period, the CALL oral task recordings may help students of foreign language develop oral proficiency moving closer to fluency. Thus, the study implies that using CALL for a longer period of time than just eight weeks may lend to stronger positive impact. Foreign language classrooms may already be exercising daily oral practice and traditional oral assessments. However, the results of the study suggest that CALL oral tasks may be needed to help students' develop oral proficiency and decrease anxiety. Therefore, to optimize students' oral proficiency, this study suggests weekly CALL voice-recordings grounded in SLA theory and Doll's post-modern curriculum be integrated into the foreign language class. Further, students should complete self-assessments with each CALL voice-recording, as well as a reflective journal after each semester to document their own perceptions of their learning.

Another implication regarding policy is that schools need to be equipped with technology that supports such a curriculum. That is, schools need to provide computer labs with recording programs like Audacity©, along with the headphones with the attached microphone, that would allow a student to listen and record their responses. In this regard, schools should have technology personnel available to assist with supplying these needs, as well as instructing the students and teachers on how to use the technology.

Finally, professional development may be needed to instruct foreign language teachers how to design a curriculum that integrates CALL in such a way that benefits the students' oral proficiency. Particular professional development may needed to understand how to implement Chapelle's (2001) six criteria and Doll's (1993) post-modern curriculum to create an effective CALL experience for the students.

7.0 Limitations

It is highly important to note that though the findings suggest that the CALL recordings helped develop Spanish oral proficiency and decrease foreign language anxiety, the sample size was quite small. Thus, it is recommended that additional research is conducted with a larger sample size to provide more power behind the results.

Secondly, the post-focus group interviews had to be conducted with a different amount of students than the total amount of participants; the control's post-focus group interview consisted of 10 out of the 15 participants, and the experimental group's interview consisted of 13 out of the 14 total experimental participants. This was based upon the control or experimental teacher's discretion of which students were available to meet for the interviews at the given times and/or student absences. Thus, if this study were to be repeated, it would be best if all the participants could be interviewed, or at least the same amount of students in both groups. Furthermore, the addition of pre-focus group interviews for each group could lend more data to confirm the transformation of students' perceptions. Furthermore, additional qualitative analyses via individual interviews may provide more in-depth results.

Also, the fact that there were two different teachers for both groups could influence the results. Teacher impact is a reality and can influence students' perceptions negatively or positively. Although, all the control students in the post-focus group interview reported feeling

more capable in their ability to speak Spanish, and most reported a decrease in anxiety by the end of the study, the results would be more reliable if both groups came from the same teacher. This would factor out the influence of teacher impact on the results of the study.

Regarding data collection with future studies, it is highly necessary to offer the participating teacher or teachers professional development as to how data must be collected. Because the data was not collected in such a way that the results of the pre- and post- FLCAS could be matched to *all* participants, tests could only be run on the post- FLCAS scores of the experimental group, rendering a smaller sample size, and making it impossible to run correlations with the control students. Thus, a future study should be vigilant to ensure that either the researcher is present to collect the data him/herself, or professional development takes place with the cooperating teacher(s).

Also, one student in the study revealed in his self-reflective journal that he didn't feel he had enough time in the class period to find value in the re-recording option afforded by the voice-recording software. Though only one student reported this, it is important to ensure that students in future studies are given adequate time to complete the task and re-record as needed. Future studies ought to control for the time allotted to the students to utilize the software, and ensure that they are given the same amount of time with each task as their feeling rushed could skew the results and defeat the purpose of incorporating a learner-centered CALL pedagogy.

Another limitation exists in that saving audio files did not work properly. The technology support director at the school had to be called upon to assist in making sure students could save their work. This troubleshooting took up some of the class time, but was resolved after the initial incident. Future studies must make sure all computers used are up to date and issues with saving files will not arise. Technology support personnel should test and confirm the process of saving

the audio files on each computer before the students use them. The teacher and students should also be instructed on how to use the software and save audio files with a practice run before beginning the study.

Lastly, this study was conducted with participants who had just begun their second year of learning Spanish at the high school level, and it only lasted for the duration of one semester. It may be beneficial to extend the study to one full year. Beyond that, stronger evidence may be found if the study followed the same students from their second year through their fourth year. The difficulty however in that length of time would be following the same group of students because the majority of high school students do not choose to proceed to the fourth year of Spanish. Thus, it is recommended to first replicate this study for the duration of one full year to see if similar results are found.

CHAPTER 4 (Article Three) THE EFFECT OF VOICE-RECORDINGS ON HIGH SCHOOL LEARNERS' SPANISH ORAL COMMUNICATION: CORRELATION BETWEEN INTEGRATIVE MOTIVATION AND ACHIEVEMENT

Abstract

The purpose of this mixed-method study is to determine the effect of computer assisted language learning (CALL) voice-recordings on high school students' integrative motivation and its correlation with achievement in Spanish oral communication. Two Spanish level-two classes were randomly assigned as experimental and control. While learning oral communication in the control group is typical calling for oral assessment by the teacher in real time, students in the experimental group created an e-portfolio of his/her CALL voice-recordings using a series of real-world contextual tasks designed by Second Language Acquisition (SLA) theory and a post-modern framework. The Mini-Attitude and Motivation Test Battery (AMTB) that measures motivation was used as the pre- and post-test to determine the effect of CALL on integrative motivation in Spanish oral communication for both groups. Mini-AMTB data were collected and analyzed using Mann-Whitney U tests comparing both groups' integrative motivation levels. Mann-Whitney U tests were run to find significant differences in the experimental group's integrative motivation in comparison to the control group's integrative motivation, both pre- and post-study. Pearson correlations were run to find that a strong correlation exists between post-mini AMTB scores and students' achievement. Post-focus group interviews were conducted with students of both groups, and experimental students completed a post-study reflective journal in order to corroborate the results of the mini-AMTB. The results of the post-focus group interviews, and experimental students' reflective journals, show an increase in motivation and confidence by the end of the study, corroborating the positive correlation found between integrative motivation and achievement. The study implied that increased oral communication

experience leads to increased integrative motivation, CALL oral tasks specifically help to increase motivation towards speaking, and such increase in motivation leads to achievement on other assessments.

Key Words: achievement, computer assisted language learning, integrative motivation, post-modernism

1.0 Introduction

For decades, the concept of motivation and its effect on learning achievement has been widely discussed and debated, especially in the field of second language learning. Researchers have not only examined the role of motivation, but have also investigated the various types of motivation. Some have identified a distinction between integrative and instrumental orientations within motivation, and have found integrative motivation to be a reliable predictive element of student achievement in the second language classroom (Dörnyei & Clément 2000; Dörnyei & Schmitt, 2001; Hernández, 2006; Masgoret & Gardner, 2003). Not only has it been found to correlate to achievement, but Dörnyei and Clément (2000) assert that integrative motivation best determines a student's level of effort and investment in learning the language. Discriminating further, Hernandez (2006) found integrative motivation to be positively correlated to oral proficiency in the second language.

Because however, motivation involves affective variables, much debate exists about which variables to measure, and which models to follow. For instance, one may build upon Gardner's (1985, 2006) socio-educational model, using the Attitude and Motivation Test Battery (AMTB), Noel's (2001) adaptation of Deci and Ryan's (1985) self-determination theory, or Clément's (1980) social context model. What is of most interest is that though these models

focus upon different affective variables, they have all produced findings that draw a significant correlation between motivation and achievement in the second language.

Still, the most widely debated model is Gardner's (1985) socio-educational model. Gardner et al. (2004) characterize the socio-educational model as one that is dynamic, in that "affective variables influence language achievement, and achievement and experiences in the language learning can influence some affective variables" (p. 1). This model involves a focus upon five classes of variables: integrativeness, attitudes toward the learning situation, motivation, language anxiety, and instrumental orientation. Within the socio-educational model, the focus is upon second language learning taking place within a classroom context, through which motivation plays an important role in the process of language learning**.** Within motivation, exist two components: integrativeness and attitudes toward the learning situation. The combination of the two components suggests an integrative motive, which facilitates language learning (Gardner, Masgoret, Tennant, & Mihic, 2004).

While these components are what comprise the socio-educational model, the AMTB is the analytical tool used to measure them. With eleven subtests measuring attitudinal and motivational variables associated with second language learning, eight subtests measure the three main concepts of the socioeducational model: motivation, attitudes toward the learning situation, and integrativeness. Two other measures dealing more with an individual's reasons for learning the second language are the *instrumental* and *integrative orientations***.** The instrumental orientation implies one's practical reasons for learning the language, such as procuring a job, or advancing one's education. The integrative orientation on the other hand implies one's desire to become involved in some way with the second language community. It is important to note that orientations do not necessarily imply motivation. One may be integratively or instrumentally

oriented in their reasons for learning the language, yet they may still lack motivation. The presence of **integrative motivation** may be found only within the measurement of the three primary constructs of the socio-educational model: motivation, integrativeness, and attitudes toward the learning situation. Thus, all three of these components must be factored in order to conclude that an individual displays integrative motivation.

Not only is this conclusion that motivation plays an important role in second language learning based upon a theoretical framework which [will be discussed further], but also upon the results of empirical studies. Recent studies (Chang, 2005; Chang & Lehman, 2002; Raby, 2007; Ushida, 2005; Warschauer, 1996) that investigated students' motivation within a computer assisted language learning (CALL) environment have shown the importance and need for further research. For instance, Warschauer's (1996) quantitative study, involving a survey administered to 167 university students of ESL and EFL in 12 writing and communications courses in the U.S., Hong Kong, and Taiwan, found that students have a positive attitude towards using computers for writing and communication in the classroom. He also found four factors that influence students' positive attitude toward computer use: 1. The desire of integratively motivated students to communicate with native speakers, 2. Empowerment, 3. Perception of quicker, better, more independent learning, and 4., Achievement.

Chang and Lehman's (2002) experimental study examined the effects of intrinsic motivation and embedded relevance enhancement within a computer-based interactive multimedia (CBIM) lesson. Using the Modified Instructional Motivation Survey (MIMMS) test measurement on university level EFL learners, they found that relevance enhancement strategies fostered language learning regardless of students' levels of intrinsic motivation; highly

intrinsically motivated students performed better regardless of the treatment; and intrinsically motivated students who used the program embedded with relevance strategies performed best.

Chang's (2005) mixed methods one-semester study involving 28 vocational university students who had no previous experience with taking a web-based course, used the Motivated Strategies for Learning Questionnaire (MLSQ) and qualitative data to find that self-regulated learning strategies in which students self-observe and self-evaluate their own effectiveness led to learners who became more responsible for their own learning, appreciative of the learning material, and confident in their class performance. She also found that students' intrinsic goal orientation improved significantly after one semester.

Ushida's (2005) mixed methods study involving 30 participants, examined student motivation and attitudes alongside second language learning in an online language course, and found that students in the online language course progressed comparably to their counterparts in traditional classroom settings, and students' motivation and attitudes in the online language course remained consistently positive throughout the 15-week duration of the study. Qualitative data showed that students' motivation and attitudes were related to the learning situation, but the nature of the relationship remained unclear.

Most recently, Raby's (2007) qualitative study, involving six university level English language learners in their second year of study, found that information and computer technologies (ICT) increased students' motivation by providing new perspectives for their language work, and increasing their autonomy.

While all of these studies revolved around motivation and computer assisted language learning, only one involved learners of Spanish (Ushida, 2005), like the current study. In contrast with all of the aforementioned studies that involve university level students, the current study

involves high school students. Too, only Ushida (2005) utilized Gardner's Attitude and Motivation Test Battery to measure motivation, like the current study. One study was experimental (Chang & Lehman, 2002), one quantitative (Warschauer, 1996), two mixed methods (Chang, 2005; Ushida, 2005) and one was qualitative (Raby, 2007). Regarding theoretical frameworks, one study (Ushida, 2005) cites a socio-educational framework (Gardner & MacIntyre, 1993); one (Raby, 2007) uses Piaget's dynamic model of 'scheme' development as applied by Anderson (2001), Vygotsky's socio-cognitive Activity theory (1962; 1978) and Dornyeï's dynamic model (2001); one (Chang & Lehman, 2005) cites Keller's (1984) attitude, relevance, confidence, and satisfaction (ARCS) model; while others cited various empirical studies stemming from computer assisted language learning (CALL) and second language acquisition (SLA) (Chang & Lehman, 2002), computer assisted instruction (CAI) and self-regulation studies (Chang, 2005), or computer mediated communication (CMC) and various motivational frameworks (Warschauer, 1996).

In line with some features of these studies, this mixed methods eight-week study, involving 29 students, seeks to fill the gap in the literature by administering a CALL intervention framed by post-modern framework and second language acquisition theory to help high school Spanish language learners develop oral proficiency and increase integrative motivation. There is a need then, especially for second language teachers to analyze the practices that may increase or decrease student integrative motivation within the context of the classroom.

2.0 Theoretical Frameworks

This study anchors itself upon Gardner's (1985) socio-educational model for understanding foreign language motivation, the second language acquisition theory (Chapelle,

2001) as in her CALL study, and post-modern curriculum framework (Doll, 1993) to improve Spanish language proficiency and increase integrative motivation.

2.1 Gardner's Socio-educational Model

The present study builds itself upon Gardner's (1985) socio-educational model as described above. It is necessary, however, to discuss the other proposed models as well as critiques to the socio-educational model, to understand why Gardner's model has been selected for this particular study. In Clément's (1980) social-context model, integrative motivation is an important element too. However, this model differs from the socio-educational model in that it suggests that the social context plays an important role in the development of motivation to learn a second language. For instance, Clément (1980) especially considers the bicultural context, and suggests that it is positive experiences with the language or the other language group that promotes self-confidence, which fosters an integrative motivation. The importance of self-confidence arises also in the work of Clément, Dörnyei, and Noels (1994), who express a need for establishing self-confidence especially when direct interaction with the other language community is not available.

Another model to consider is Schumann's (1978) acculturation model, which emphasizes the importance of second language learning within a natural setting, not within the classroom. While no mention of integrative motivation exists here, there is discussion about the social and affective forces (i.e., group attitude and motivation) acting upon the learner. Dörnyei's (1994) extended motivation framework similarly considers such variables, focusing upon three motivational levels: 1. language level (integrative/instrumental motivation), 2. learner level (individual difference motives like self-confidence), and, 3. learning situation level (motives associated with aspects of the language class situation).

Gardner et al. (2004) point out that, "an important feature of these models is that they all consider the concept of identity and identification with the other language community to be part of the language learning process… this is the basic premise of the socio-educational model and why the concept of integrative motivation is considered to be an important feature of language learning" (p. 3). Often in the literature, inconsistencies arise based upon a misrepresentation of Gardner's socio-educational model. For instance, researchers confuse the terms *integrative motivation, integrative orientation*, and *instrumental orientation,* and by doing so, claim to find inconsistencies (Crookes & Schmidt, 1991; Dörnyei, 1990; Ellis, 1994; Oller, 1978; Oxford, 1996). To respond to these so-called inconsistencies, Masgoret and Gardner (2003) formed the hypothesis that "the relationship of second language achievement to measures of attitudes, motivation, and orientations are consistently positive, and the correlation of motivation with achievement in the language is higher than for the other measures" (p. 132). After conducting a meta-analysis composed of 75 studies and over 10,000 participants, they found their hypothesis to be strongly true.

A second hypothesis they formed to counter the alleged criticisms made against the socio-educational model involved the context of the sociocultural milieu. This involves the distinction between whether the student is learning a second language or a foreign language. According to Oller (1978), foreign language learning involves learning a language that is not commonly used in the community and is not accessible outside of the classroom, whereas second language learning refers to contexts in which the language is available within the community and students have many opportunities to experience it outside of the classroom. Some researchers have argued against the socio-educational model claiming that results for motivation would be different if one takes into account the context of either second language or foreign language

learning. It is interesting to note as well that Dörnyei (1990) had originally argued that students studying in a foreign language context would not have enough exposure to members of the target community and therefore could not accurately form their attitudes regarding the integrative element. He concluded then that their achievement would rely more upon an instrumental orientation rather than an integrative one. However, he has since changed his position, when Dörnyei and Clément (2000) found that for students within the foreign language context, integrativeness was the most powerful component determining the learner's affective disposition, language choice, and investment in the learning process. Due to the various claims, Masgoret and Gardner (2003) also put this to the test via their meta-analysis, stating in their second hypothesis, "The relationship of attitudes, motivation, and orientations to language achievement will be stronger in second language than in foreign language environments" (p. 135). They found that that the results were inconsistent, and completely opposite for both objective measures and self-ratings, thus calling into question the validity of the hypothesis (which they had predicted). Further, their data showed little support for Dörnyei's (1990) thought that correlations would be higher for integrative orientation as opposed to instrumental orientation in second language contexts as opposed to foreign language contexts. Rather, the correlations were higher for the integrative orientation than for the instrumental orientation in *both* foreign and second language contexts.

Finally, Oller (1978) and Crookes & Schmidt (1991) questioned the effects of age and experience upon attitudes and motivation in second language learning. Thus, the third hypothesis tested in Masgoret & Gardner's (2003) study stated, "The relationships between achievement in another language and attitudes, motivation, and orientations will vary as a function of whether or not students are in elementary school versus secondary school versus

university level courses" (p . 136). They found only slight support for this hypothesis, and found strong support for the idea that the correlations would largely be positive regardless of age.

After having considered other theoretical frameworks, the critiques of some against the socio-educational model, and Gardner's empirically based responses to these critiques, this study anchors itself upon Gardner's socio-educational framework, utilizing the mini-AMTB as an analytical tool and form of measurement.

2.2 SLA Theory for the Design of CALL Tasks

Chapelle (2001), while recognizing the value in the study of Second Language Acquisition, also questions whether it is a field of chaos. Today's classrooms incorporate a mélange of theories, methods and approaches that the field has offered over the years; Some grounded in structuralist and behaviorist psychology (Direct Method, Audiolingual Method), or Chomsky's cognitive psychology (Cognitive Code Learning), and others considering the affective realm (Community Language Learning, Suggestopedia, the Silent Way, Total Physical Response, and the Natural Approach). Chapelle addresses a need to reduce chaos and make room for progress.

Her suggestion for securing order in the field is to align SLA theory with the design of CALL tasks. She has constructed six criteria for designing CALL tasks, each of them resting upon SLA theory and research. The first being **language learning potential**, resting upon the research of attention, focus on form, and negotiation of meaning (e.g., Doughty & Williams, 1998; Gass; 1997, Long, 1996; Pica, 1994; Robinson, 1995; Schmidt, 1990). The second, **learner fit**, takes into consideration learner style, interest, age and ability. Chappelle (2001) identifies Skehan's (1989) SLA research on individual differences as a complimentary fit. The third criterion is **meaning focus**, which places emphasis on the learner's attention towards

meaning during language tasks. Here, Chappelle bases this upon the work of Pica, Kanagy, and Faludin (1993). The fourth criterion, **authenticity**, refers to the notion that the language task is based in reality, and could be something the student might encounter outside of the classroom (Bachman & Palmer, 1996; Lewkowicz, 2000). Fifth, the criterion of **positive impact** addresses the idea that the CALL task carries benefits beyond language learning, drawing upon theories of learner's identity (Pierce, 1995). The sixth criterion is **practicality**, which emphasizes the ease of application within the classroom setting. This list of criteria is useful for teachers who plan to use aspects of CALL in the classroom, and especially teacher-researchers aiming to design their own CALL study. The current study proposes a CALL and SLA curriculum integrating Chappelle's six criteria, but also pushing beyond the boundaries of the six criteria. The current study proposes that post-modern framework may contribute a greater depth that may be lacking in Chappelle's six criteria.

2.3 William Doll's Post-modern Curriculum Framework

According to Doll (1993), the "[post-modern curriculum theory is] a fascinating, imaginative realm (born of the echo of God's laughter) wherein no one owns the truth and everyone has the right to be understood" (p. 151). In contrast, the modernist curriculum is one that is linear, predictable, closed–ended and non-constructive. Doll's conceptualization of the post-modern curriculum stresses the importance of self-organization, indeterminacy, stability through instability, order emerging spontaneously through chaos, and creative construction of meaning. Self-organization suggests a process that is open-ended, and non-teleological, guided by reflective action, interaction, and transaction. In order for self-organization to work, there must be a degree of turbulence. That is, something must trigger the self to re-settle itself after it has been challenged or perturbed (Piaget, 1980). It is this complexity or disequilibrium that

leads to transformation. To reach these areas of self-organization and transformation, Doll asserts that the post-modern curriculum should be "rich, recursive, relational and rigorous" (p. 176).

Richness refers to multiple layers of meaning, multiple possibilities, and multiple interpretations. In order to achieve this, the curriculum must have a degree of chaos, disequilibrium, spontaneity, and lived experience. Applying this concept to oral communication in foreign language, richness may occur through meaningful dialogue and negotiating meaning. Providing students with opportunities to construct and co-construct language in contexts that relate to real-life for example, allows for a multiplicity of responses. For instance, if a certain unit revolves around themes of family and personal relations, having students communicate with a partner, asking about and describing their family members, would provide them with meaningful context and the opportunity to be creative with their language production. No two students would produce the exact same results, yet together, they would negotiate and create meaning.

Recursion refers to the process of reflecting upon one's work, which leads to exploration of self and text. According to Doll, a transformative curriculum relies upon recursive reflection. It is recursive in that it allows for the realization that every ending leads to a new beginning, and every new beginning rises from a prior ending. It is important to note that recursion is not synonymous with repetition, which denotes a closed frame. Rather, recursive reflection implies an opened frame and is achieved through distancing oneself from one's own work, allowing for constructive feedback from oneself, peers, and teacher, leading to transformation. An example of fostering recursive reflection in the foreign language classroom may involve the use of self-evaluations and language portfolios. Self-evaluations allow students to distance themselves from

their work in order to think about their learning and language portfolios provide the opportunity to reflect upon samples of their language production over time. Allowing students to take part in peer-review and editing also allows for reflective recursion to emerge. Such recursive reflection on the student's part may lead to greater awareness of their learning and transformation.

Doll's need for *relation*, emphasizes global interconnections, both pedagogically and culturally. Pedagogically, it is necessary to see the connections within the structures of the curriculum---such connections lend to the depth of the curriculum. Culturally, it is necessary to recognize a connectedness to one another. Rather than a competitive approach to learning, knowledge is co-constructed. This is essential to the foreign language curriculum that allows students to work together in creating meaningful dialogues, role-plays, or interviews in the target language. Relation is of utmost importance in regards to meaningful language exchanges, in that such exchanges could not exist without the "other" (Vygotsky, 1929). Language learning cannot develop in isolation; Meaning is created and transformed socially. Thus, Doll's push for a relational curriculum is especially integral to the oral aspect of language learning.

The example provided earlier of students asking about and describing family members to a partner may be extended further by asking students to then report what their partner said to the class. Such an example may be relational on several levels. Because the students would first need to form questions and gather information from their partners in order to report about them, their initial interaction is social, requiring question formation, such as, "Do you have any siblings*?/ ¿ Tienes hermanos? and "What's your brother like? / ¿Como es tu hermano?*. Only after the social interaction, could they describe another student's family members. Meaning in this regard is thus negotiated and co-constructed. The task is relational, requiring social interaction to create

meaning. It is also relational in that the context may be related to the unit that the students are studying at the time, as well as related to something tangible in their own life.

Finally, *rigor* refers to a curriculum that is aware of hidden assumptions and attempts to reveal assumptions and create transformative meaning. It is grounded upon interpretation and indeterminacy. Again, this pertains to foreign language learning in that assumptions about the culture may be revealed and transformed. Take, for example, the use of idiomatic expressions in a given language and how they reveal truths about the culture. For instance, in Spanish, age is not expressed as a state of being as in English: "I *am* fifteen years old". Rather, age is perceived as a possession: "I *have* fifteen years" (*Yo tengo quince años*). Thus, culture in regards to how the world is perceived, is embedded within the language. Rigorous oral development in the foreign language curriculum will lead to speakers who are cognizant of the particular cultural and linguistic nuances pertinent to the language they are learning. Rigor is also provided in this study on another level, in that students' own assumptions about themselves speaking Spanish may be revealed in the beginning of the study, and possibly transformed by the end of the study.

The current study provides several speaking opportunities using Doll's (1993) four elements of richness, recursion, relation, and rigor in various contexts. For example, one of the CALL tasks involved students working together to first interview one another in the target language about their typical daily routine. They then individually recorded themselves talking about their partner and telling what their partner's daily routine looks like. The context was designed to elicit responses that would include the grammatical structures of reflexive verbs and reflexive pronouns. For example, in English one would say, "She wakes up at six in the morning". In Spanish however, the use of reflexives would carry a literal translation of "She wakes *herself* up at six in the morning": *Ella se despierta a las siete de la mañana*. First, the

activity began with using reflexives in the first-person. The activity then transformed into using reflexives in the third-person point of view, as the students described what their partner does as a daily routine.

Such an activity allowed for richness in that the result was a multiplicity of responses and interpretations based upon what the students decided to say and how they chose to create meaning together. It was relational pedagogically in that the curricular activity itself related to the overall curriculum of meanings and structures that were being presented in the current unit of study. It was relational culturally in that students worked with a partner to create oral dialogues and make meaning, which then led to their recorded monologue; they would not have been able to arrive at the monologue without first connecting with and interviewing the "other." The activity was recursive in that students played back their recording as many times as they wished to listen to themselves speaking the target language---they were then able to reflect upon their language creations, and evaluate themselves.. Thus, recursion occurred when the students reflected on their language production and recognized the importance of editing themselves---that their first response is not necessarily their last and that there is the possibility to change, add, delete, or transform their original response. Finally, this activity allowed for rigor in that it allowed students the opportunity to understand the cultural and linguistic nuances of the use of the reflexive grammatical structure, and how it functions in Spanish in contrast to English.

The aforementioned are just some examples of a post-modern curriculum for foreign language oral communication, using Doll's approach. Due to a dearth of empirical data using Doll's post-modern framework, this current study employs a curriculum that is post-modern to both explore its potential benefits in relation to students' Spanish oral proficiency, and fill the gap in the current literature.

3.0 Problem Statement

Based upon the need of empirical research using technology framed by post-modern SLA and CALL tasks to impact integrative motivation and **achievement** toward foreign language oral proficiency, this study proposes to take a long-researched variable (motivation) and apply it to a long-occurring and still current problem (oral proficiency), using today's technology (Audacity©) framed by post-modern SLA and CALL tasks.

Due to the confusion in the field over the various models of understanding integrative motivation and foreign language learning, this study also aims to add to the research that supports Gardner's (1985) socio-educational model.

A need exists for second language and foreign language teachers to consider the impact of computer-assisted language learning on motivation. Meaningful uses of CALL in the foreign language context may help increase motivation, especially in relation to oral communication in the target language. Students of foreign language need the opportunity to develop their voice and identity over time. This study thus examines the effects of a CALL curriculum designed to give students the opportunity to develop their voice in the target language, over the course of an eight-week study, to uncover any changes in motivation toward speaking the target language.

This study at hand used frequent oral assessments (control group) and CALL voice-recordings (experimental group) over time as a measure to evaluate oral communication development of both groups of students. Each speaking task was assessed, but not as a test grade. Each was assessed utilizing an authentic assessment rubric (See Appendix A). Thus, four research questions are framed for this study.

3.1 Research Questions

Four research questions guide this study:

1. After repeated experiences in speaking the foreign language, via CALL voice-recordings, will motivation, and more specifically, integrative motivation, increase in the experimental group of students as compared to the control group?
2. How do the students in the experimental group as a result of the CALL voice-recordings perform on a traditional real-time oral performance in front of the class**,** in comparison to the control group?
3. How do the students in the experimental group as a result of the CALL voice-recordings perform on the midterm exam, final oral exam, final exam, semester grade and end of year grade in comparison to the control group?
4. How do both experimental and control group of students perceive their motivation levels and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessment, respectively?

3.2 Significance of the Study

Too, this study may contribute to the computer-assisted language learning literature, proposing an effective way for teachers to increase motivation towards oral communication in the target language, by using technology for oral communication development in the classroom setting. The results may also contribute to the literature in recognizing that CALL tasks based in SLA theory and post-modern framework help to increase student motivation. Lastly, this study may corroborate the previous findings lending more credibility to Gardner's (1985) socio-educational model.

4.0 Methodology

4.1 Study Design

This study is a mixed-methods approach with an experimental (Campbell, 1963) design corroborated with focus group interviews. The purpose of such an approach is to triangulate the data and add richness to the results that might be lacking otherwise (Johnson & Onwuegbuzie, 2004). Table 4.1 provides a conceptual view of the quantitative/qualitative design.

Table 4.1 Quantitative (pre- post-design) Corroborated with Post-Focus Group Interview

Group	Design	Variable	Sample	Qualitative Study (Post-Focus Group interview)
Teacher 1 Students (Experimental)	Pre/Post	Motivation	N=14	N=13
Teacher 2 Students (Control)	Pre/Post	Motivation	N=15	N=10

4.2 Context of Study

This study took place in a parochial high school located in Gnomesville (pseudonym), MI. Students may live in areas up to twenty miles away. The high school accepts students across district boundaries. While it is a Catholic school, not all students who attend are Catholic. While tuition is comparable to the costs of neighboring Catholic high schools, the school offers scholarships, grants, and alternative options for students of lower income families.

4.3 Research Participants

4.3.1 Students. The 29 research participants comprised two separate level-two Spanish students. All participants comprised of high school-age boys and girls, approximately between the ages of 15 and 18. The experimental group comprised a class of 14 level-two Spanish students and their teacher, and the control group comprised a class of 15 level-two Spanish students and their teacher.

4.3.2 Teachers. The teacher of the control group was a 64-year-old white male with 35 years of teaching experience at the high school level, and 11 years of experience teaching at the

university level. At the time of the study, he was a first-year teacher at the school and was responsible for teaching Spanish levels one and two. He held a Bachelor's degree with a major in Latin and a minor in Spanish, a Master's degree in Latin, and post-graduate credits in Spanish.

The teacher of the experimental group was a 35-year-old African American woman with over 10 years of teaching experience. She was responsible for teaching levels two through Advanced Placement, and identified herself as using a Communicative Approach. At the time of the study, she held a Bachelor's degree in Liberal Arts with a major in Spanish, and was certified to teach Spanish at the Secondary level.

4.4 CALL Communication Tasks Reflecting Post-Modern Framework

Task One

Students were asked to describe their typical daily routine, using reflexive verbs in the present tense. An example of a morning routine is as follows: "I wake up at six, wash my face, brush my teeth, and get dressed. I eat breakfast, and then I go to school."

Task Two

Students began by working with a partner to inquire about their partner's typical daily routine. They then created a recording describing their partner's daily routine, using reflexive verbs and the subject pronoun *he* or *she*. An example of the partner questions would follow as, *"What time do you wake up? Then, what do you do? What time do you go to school?"* After getting information from their partner, a possible response for the recording may be, *"John wakes up at 6:30, brushes his teeth and gets dressed. He goes to school at 7:30."*

Task Three

Students read and listened to a textbook dialogue at the end of their chapter, between "Pablo" and "Rafael," discussing their thoughts on camping. The students then needed to

explain why Pablo likes camping , using the present tense, target vocabulary and details from the conversation. A possible response would follow as, *"Pablo likes to camp with friends. He likes nature and they put up a tent and sleep int heir sleeping bags. He also likes to take walks and swim in the lake with his friends, but he doesn't like washing up with cold water. "* The script translation of the dialogue from the textbook is as follows:

> Rafael: *You like camping a lot, right?*
> Pablo: *Yes, I do.*
> Rafael: *The truth is that it isn't very interesting for me. Where do you sleep? Do you fall asleep in the open air?*
> Pablo: *No. I always go with one or two friends, and we put up a tent. And we sleep in a sleeping bag*.
> Rafael: *What do you do to eat?*
> Pablo: *Very easy. We prepare hamburgers and sausages on the barbecue.*
> Rafael: *There are a lot of insects, right?*
> Pablo: *Well, there are. But, come on! They don't bother us.*
> Rafael: *How do you pass the rest of the day? Aren't you bored?*
> Pablo: *On the contrary. We take walks and swim in the lake. We go to bed early because we also get up early.*
> Rafael: *It seems to me that you wake up when the sun wakes up.*
> Pablo: *Yes, but it doesn't bother me because I'm a morning person. But there is one thing that I don't like.*
> Rafael: *Really? What?*
> Pablo: *Washing myself in cold water.*

Task Four

The students were given a possible reality-based scenario. In this scenario, they were taking a train trip to visit their cousins in California. They had two hours to pass while waiting at the train station, and called their mom to pass the time. Their mom wants to know what the train station is like. They were given pictures of the train station and had to describe the images using vocabulary that was learned in this unit. Responses would include present and possibly preterite tenses. For example, *"Hi mom, I am at the train station. The hall is very big and there are a lot of people. There is a schedule, vending machine, and kiosk. I bought a magazine to read while I*

wait. I already bought my round-trip ticket. The employee was very nice. My train departs in two hours.”.

Task Five

Students were given a reality-based scenario in which they were traveling to Canada by train to visit their cousins. In this scenario, a friend asked them specific questions about their upcoming trip. The teacher played the role of the friend, asking five questions. The students were not given the questions in advance. They had to rely on their listening skills to understand the questions in order to create their response. This task, incorporating the need to exercise listening skills, was modeled after the AP Spanish Exam. The five questions were:

11. Do you have a one-way or round-trip ticket.
12. Do you have to change trains?
13. Do you have a first-class or second-class ticket?
14. Are you going to eat in the cafeteria car?
15. At what time do you board the train?

Students then recorded their responses to each question. An example might follow:

1. No, I have a round-trip ticket.
2. No, I don’t have to change trains.
3. I have a first-class ticket.
4. Yes, I am going to eat in the cafeteria car.
5. I board the train at 7:30 tomorrow evening.

Task Six

Students were given a reality-based scenario involving a friend who was absent from school that day. The friend called the student and wanted to know what he or she missed. Students had to answer the friend’s questions using complete sentences, the past tense, and as much detail as possible. The teacher played the role of the friend asking the following questions:

11. Did you watch a movie in history class?
12. Did Mrs. Smith collect the homework?
13. What did you read in literature class?
14. How was science class?

15. Did you take the test in math class?

An example of their responses would be:

5. *Yes, I watched a movie in history class. It is very interesting.*
6. *Yes, Mrs. Smith collected the homework.*
7. *In literature class, I read The Crucible.*
8. *Science class is very boring. We only did a worksheet.*
9. *Yes, we took the test in math class. It's very easy*

Task Seven

Students created an individual recording describing their favorite restaurant and identifying some of their favorite foods served at the restaurant. An example of their recording would be, *"My favorite restaurant is Pizza Papalis because they have the best pizza and salad. It is a little expensive for me, so I don't eat there often. It is a good place to go with friends for a special occasion. Also, the waiters are nice."*

Task Eight

The students were each given four images of different types of food. They then had to identify the food and indicate how frequently they eat that type of food. In this case, the teacher looked for the use of both target vocabulary, and proper usage of adverbs of frequency. An example would be, "*I never eat lobster. I don't like it and it is too expensive."*

For a summary of the eight CALL communication tasks and associated elements and the timeline of activities, see Table 4.2.

Table 4.2 CALL Communication Tasks and Timeline

Weeks	**ACTFL National Standards**	**Context**	**Grammar Structures**	**Grouping**
10/08/2015	1.3, 4.1, 5.2	Daily routine of self	Reflexive verbs using *I*	Individual
10/15/2015	1.1-1.3, 4.1, 5.2	Daily routine of other	Reflexive verbs using *he/she*	Partner/Individual

10/22/2015	1.1-1.3, 3.2, 4.1 5.2	Activities/ items for camping	Express like/dislike & present	Individual
10/29/2015	1.2, 1.3 2.1, 2.2, 5.2	Train station description and interactions	Present, near future, preterite	Individual
11/05/2015	1.1,-1.3, 4.1, 5.2	Train station interactions	Irregular verbs, need, present tense, near future	Partner/Individual
11/12/2015	1.1-1.3, 4.1, 5.2	Past tense to describe activities done at school	Preterite using *I*	Partner/Individual
11/19/2015	1.2,1.3, 5.2	Favorite restaurant	Express preference, present	Individual
12/03/2015	1.2, 1.3, 5.2	Food items and frequency	Like/dislike, frequency, present	Individual

4.4.1 Spanish Curricular Tasks using SLA Theory and a Post-modern Framework

Spanish oral communication tasks were tailored according to Chapelle's (2001) six criteria (language learning potential, learner fit, meaning focus, authenticity, positive impact, practicality) merging SLA theory with CALL, and Doll's (1993) four elements (richness, recursion, relation, and rigor) of a post-modern curriculum. What follows is a thorough discussion of one CALL task framed by Chapelle's (2001) six criteria and Doll's (1993) four elements.

Communication Task 6, for example, involves students describing a real or imaginary school day, using the preterite tense. Language learning potential is achieved through the possibility of reviewing and learning vocabulary associated within the context of school, and using language structures used to describe the past. Learner fit is achieved in choosing a topic

(school) that is relatable and of interest to the age (mid teens) of students. Also, the goal of this task is commensurate with the level of learning (Spanish level two). Meaning focus is achieved in that while the goal is to describe the events that transpired in a school day using the past tense, the focus is not on grammar. That is, though the student may confuse the use of the preterite, and possibly mix it up with the indicative tense, the focus is on making meaning, not on perfect grammar usage. Authenticity is achieved in that this task is based in reality. That is, students will talk about a past school day they've actually experienced, or they may describe an imaginary past school day (one they wish had occurred). In either case, the task is based on reality or a potential reality. Positive impact is achieved in that students not only learn language, but they also gain experience in expressing themselves in the target language. Therefore, they have the opportunity to develop their identity in the target language (Pierce, 1995). Finally, practicality is achieved in that the task of using voice-recording software may be easily implemented. Students may feasibly use Audacity© to record, play back, listen to, and re-record their response as desired. Students may record as many times as needed within the period until they are satisfied with their final submission.

Manifestation of Doll's four elements is discussed. Richness is achieved through a creation of multiple meanings. That is, there is not just one objectively correct answer. Rather, students may create various responses that may achieve the goal of the task. One student may respond, "*Today, in literature class, we read 'Hamlet.' We had some questions to answer for homework,* " while another student may respond, *"Literature class was fun. Mrs. Smith told us a funny story about her three-year-old son."* Recursion is achieved by giving students the opportunity to listen to their recording, reflect on their language production and add, edit, or delete something to transform their original response. This process allows students to produce

what they consider to be their optimal voice product. Relation is achieved in that the context is relevant to their current unit of study. Further, the context is relevant to their life (school day they experienced or wish they experienced). It is also relational in that they will be using vocabulary and structures *("Today, in literature class..."*) they have previously learned in prior units. Finally, rigor is achieved through understanding cultural and linguistic nuances built into the language. For instance, taking the example of age described earlier, a student may respond, "*Mrs. Smith told us a funny story about her son who is three years old.*" A student that is cognizant of how age is perceived will be aware that age is a possession, not a state of being. Thus, a proper translation would be, "...her son who *has* three years" as opposed to "...her son who *is* three years old."

Each task has been similarly designed to incorporate Chapelle's (2001) six SLA based on CALL criteria, and Doll's (1993) four elements of a post-modern curriculum. Table 4.3 provides a summary of the SLA and Post-modern framed curricular tasks.

Table 4.3 SLA and Post-modern Tasks

Elements of CALL framed by SLA Theory	**CALL Tasks**	**Post-Modern Framework (Doll)**
Language learning potential	Grammar/Structures: reflexive/irregular verbs, preterite, near future, need Vocabulary: daily routine, camping, train station, trip, restaurant	**Richness**: multiplicity of meaning, no absolute answer, open-ended responses **Relation:** task goals related to current and prior units of study **Recursion:** self-reflection/evaluation **Rigor:** task responses elicit awareness of Spanish cultural and linguistic nuances.
Learner fit	Relevant tasks (i.e. daily routine, camping, trips,	**Relation:** context of tasks based on reality or potential

	restaurant) designed to fit interests, level, & age	reality of learner
Meaning focus	Tasks elicit meaningful response. Grammar built into response, but does not take precedence over meaning.	**Richness:** multiplicity of meaning, no absolute answer, open-ended responses **Relation: ta**sk goals related to current and prior units of study **Recursion:** self-reflection/evaluation
Authenticity	Tasks based in reality (i.e., daily routine, camping, trips, restaurant)	**Relation:** context of tasks based on reality or potential reality of learner
Positive impact	Beyond lang. learning, students develop identity and computer literacy	**Relation:** use of Audacity© related to AP use **Recursion:** self-reflection/evaluation

4.5 Audacity©

Audacity© is a free, downloadable, voice-recording software product compatible with PC or MAC operating systems. Currently, College Board suggests using Audacity for the oral portion of the AP foreign language exams. For instance, on the day of the AP exam, students use Audacity© to record their oral responses. They are able to save their responses to a file, which is then burned to a CD, and mailed to College Board for evaluation.

Below is a screenshot of Audacity©. The blue waves indicate the intonation of the voice that is being recorded. Students simply press the red circular button to begin recording. If they need to pause in thought, they may click the pause button indicated by the two blue lines. When they are finished with the recording, they may click the yellow square to stop. By clicking the green arrow, students may listen to their recording. When students are satisfied with their recording, they may click on "File" in the upper left corner to save their work.

Using the software Audacity©, for the purpose of voice-recording, students in the experimental group recorded themselves based upon authentically designed tasks---that is, the tasks were reality-based. Creating a voice portfolio, these students were afforded the opportunity to self-evaluate and reflect upon their oral proficiency development over a period of eight weeks in a reflective journal.

Audacity© has been installed on all the school computers in the media center at Chaby High School. Students use a special headset that has a microphone attached. Using Audacity©, they may click record, and speak into the microphone. They may stop the recording with another click. They are able to play back their recording, and decide whether or not it is to their liking. If not, they may re-record themselves. CALL as a tool may assist in both establishing the students' identity and voice as a target language speaker, improve their oral proficiency over time, and decrease their anxiety to communicate in the target language.

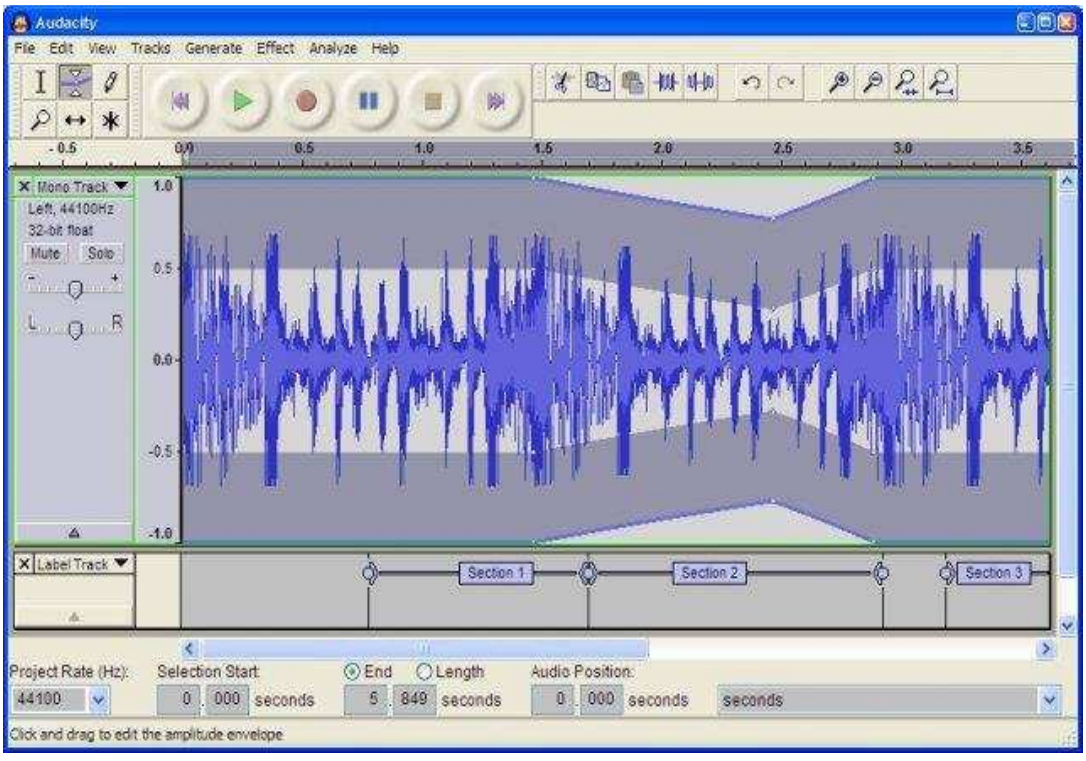

Figure 4.1. Audacity© Screenshot

4.5.1 Using Audacity© with Tasks

The curriculum in the classrooms of both the control and experimental groups is one that focuses on meaningful instruction. Both teachers incorporate all four communication skills (listening, speaking, reading and writing) in day-to-day activities. Grammar and pronunciation are not ignored, but are not the main focus. Meaningful communication is the goal for both teachers of Spanish. Therefore, both teachers frequently create scenarios for students to practice speaking Spanish, with a partner or group, engaging in dialogues and/or role-plays. The major difference, however, is that the experimental group added the use of the *Audacity* program to create voice portfolios. These portfolios enabled the students to record themselves speaking Spanish, and play back their recording, assess themselves, and re-record to their liking. They were able to track their development over the period of eight weeks and reflect back upon their growth at the end of the study. This fits well into Doll's (1994) post-modern curriculum, being rich, rigorous, relational, and recursive.

4.6 Analytical Tools

The AMTB measures motivation, or goal-directed behavior (Heckhausen, 1991) via three scales titled Motivational Intensity, Desire to Learn the Target Language, and Attitudes Toward Learning the Target Language. However, integrative motivation is measured by aggregating Integrativeness, Attitudes Toward the Learning Situation, and Motivation. Masgoret and Gardner (2003) define integrativeness as an "openness to identify, at least in part, with another language community" (p. 126). The three scales within the AMTB used to measure integrativeness are Attitudes Toward the Target Language Group, Integrative Orientation, and Interest in Foreign Language. Lastly, Masgoret and Gardner (2003) explain that attitudes toward the learning situation refer to the learner's reaction to anything involved with the immediate context in which

the language is taught. The AMTB utilizes two scales designed for this particular measurement: Evaluation of the Course and Evaluation of the Teacher. Once more, it is the complex of all three of the primary concepts (Integrativeness, Attitudes Toward the Learning Situation, Motivation) that make up *integrative motivation*. That is, one who is integratively motivated may be characterized as one who is "motivated to learn the second language, has an openness to identification with the other language community, and has favorable attitudes toward the learning situation" (Masgoret & Gardner, 2003, p. 128). Once more, research on integrative motivation has found it to be a predictor of persistence in language study, classroom participation, and language proficiency (Gardner & MacIntyre, 1991; Gardner & Smythe, 1981; Gilksman, Gardner, & Smythe, 1982). Table 4.4 provides a conceptual summary of the scales used in the AMTB.

Table 4.4 Constructs and Scales of the AMTB from Gardner *(2001, pp. 8-9)*

Construct 1:	Integrativeness
Subtest 1:	Integrative orientation (4 items)
Subtest 2:	Interest in foreign languages (10 items)
Subtest 3:	Attitudes toward the target language group (10 items)
Construct 2:	Attitudes toward the Learning Situation
Subtest 4:	Evaluation of the language instructor (10 items)
Subtest 5:	Evaluation of the language course (10items)
Construct 3:	Motivation
Subtest 6:	Motivation intensity (10 items)
Subtest 7:	Desire to learn the language (10 items)
Subtest 8:	Attitudes toward learning the language (10 items)
Construct 4:	Instrumental Orientation
Subtest 9:	Instrumental orientation (4 items)
Construct 5:	Language Anxiety
Subtest 10:	Language class anxiety (10 items)
Subtest 11:	Language use anxiety (10 items)

The previous is necessary to understand the origin of the mini-AMTB that was used in this study. The mini-AMTB contains one question correlated to each of the 11 subtests listed in

the table above. Therefore, the mini-AMTB comprises 11 questions total, and requires much less time than the longer test battery.

See Appendix F for the mini-AMTB that was adapted for this study. The mini-AMTB accounts for the five major constructs and the 11 questions on the mini-AMTB that pertain to each. Table 4.5 displays the five major constructs of the socioeducational model and the sub-categories and questions pertinent to each construct.

Table 4.5 Mini-AMTB Constructs and Scales

Construct 1:	Integrativeness
Question 1:	Integrative orientation (1 item)
Question 2:	Attitude toward Spanish speakers (1 item)
Question 3:	Interest in foreign language (1)
Construct 2:	Attitudes toward the Learning Situation
Question 6:	Evaluation of the language instructor (1 item)
Question 9:	Evaluation of the language course (1item)
Construct 3:	Motivation
Question 11:	Motivation intensity (1 item)
Question 4:	Desire to learn Spanish (1 item)
Question 5:	Attitudes toward learning Spanish (1 item)
Construct 4:	Instrumental Orientation
Question 7:	Instrumental orientation (1 item)
Construct 5:	Language Anxiety
Question 8:	Language use anxiety (1 item)
Question 10:	Language class anxiety (1 item)

One method of calculating motivation then is to take into consideration all 11 items on the mini-AMTB, however, integrative motivation specifically is calculated by the aggregate of constructs 1, 2, and 3 (Gardner, 2010).

A second analytical tool similar to Tennant and Gardner's (2004) "STM motometer," will be used to measure the experimental group's state motivation in relation to using technology. Figure 4.2 is an example of the motometer.

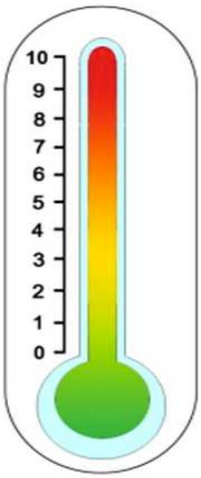

Figure 4.2 Motometer to Measure State Motivation

4.7 Data Collection

The experimental group used the *Audacity* software once a week, during a 50-minute class period, for the duration of the eight-week study, resulting in eight voice-recordings comprising each participant's voice portfolio. This group also completed a self-assessment for each voice-recording, and reflected upon their perceived growth at the end of the eight-week period in a reflective journal. The participating teacher also assessed the oral proficiency of each student for each activity. In contrast, the control group did not use Audacity, did not create a voice portfolio, and did not self-assess because they did not have a recording of themselves to listen back to in order to self-assess---this is one of the greater benefits of using Audacity rather than just presenting in real-time. Similarly, the control group could not reflect upon their oral proficiency development over time because their oral assessments were done in class, through oral dialogues and/or real-time presentations. That is, they were not able to play back their submissions, re-record, and reflect on their oral performance, because they were either individually presenting their oral communication in front of the class, or conducting a partner/group role-play.

A pre -and post- mini adapted version of the AMTB (Attitude and Motivation Test Battery) was given to the control and experimental groups. Too, students in the experimental group completed a pre- and post- conceptual test similar to Tennant and Gardner's (2004) "motometer," asking to measure their level of motivation in relation to using technology in the foreign language classroom. It looks like a thermometer, and students drew a line anywhere on the thermometer to indicate the level of their motivation. Upon instruction, the teachers administered the tests, collected, and returned them completed to the researcher. They were then secured in a locked cabinet.

The experimental group's teacher completed an oral evaluation for each experimental student's recording over the period of the eight-weeks and provided a copy of each evaluation point system and/or written. The control teacher also completed an oral evaluation for each student, with each task, using the same rubric as the experimental teacher. The rubric is qualitative in that though it was based upon a point system, there was also room for written comments from the teacher in order to provide feedback to the student) for the researcher.

The experimental students also filled out their own self-assessment for each of their own recordings. The teacher collected the self-assessments at the end of each visit to the lab, and gave them to the researcher.

The quantitative results were corroborated with the results of the post-focus group interviews with 13 experimental and 10 control randomly selected students. These interviews elicited responses regarding motivation in relation to oral communication in the target language, and foreign language learning in general. This measure was taken to provide depth to the study and to uncover more data that quantitative measures alone may not reveal.

4.8 Data Analysis

The pre- and post-mini-AMTB scores between both experimental and control group were compared, testing for differences between both groups and within both groups pre- and post-study. The experimental group's post-mini-AMTB scores were correlated to the oral midterm (December), midterm (December), oral final (June), final (June), traditional oral task, semester grade (December) and end of year grade (June). This provided a broad understanding of the effect of integrative motivation on a larger outcome. Running Pearson Correlations between the experimental group's post-mini-AMTB scores and the June scores also helped in finding whether or not the intervention produced lasting effects.

Analysis involved Pearson correlations. Pearson correlation is a measure of the degree of linear dependence between two variables in order to figure out if there is any correlation between student foreign language anxiety and their CALL voice-recordings based on post-modern tasks. A value of +1.0 and -1.0 reveals that the correlation is either positive or negative. If the value is 0, then there is no correlation, thus the closer the value is to +1 or -1, the stronger the correlation. Power analysis was also run to determine the strength of correlations that were found.

Excerpts from the post-focus group interview transcripts and self-reflective journals, that relate to motivation towards speaking the foreign language were selected and corroborated with statistical results.

4.9 Reliability and Validity Issues

Regarding Gardner's (1985) AMTB, the scales have proven reliable with six-week test-retest coefficients between .68 and .86 (Gardner & Smythe, 1981). The 11-item mini-AMTB has demonstrated highly acceptable levels of convergent and discriminant validity. For example, Gardner, Lalonde, and Moorcroft (1985) found that correlations between the regular AMTB

scales and their corresponding mini-AMTB items were significant with a median value of .575. Further, correlations between the scales within each measuring format were comparable to each other, with medians of .220 for the mini-AMTB and .375 for the regular AMTB format.

In Gardner and MacIntyre's (1993) study, correlations between corresponding scales using the regular format and the mini-AMTB were all significant with a median of .720. Correlations between the scales within each measuring format were also comparable to each other with a median of .160 for the mini-AMTB and .195 for the regular AMTB.

Finally, in Tennant and Gardner's (2004) study, correlations of Integrativeness, Attitudes toward the Learning Situation, Motivation, and Language Anxiety with five measures of French achievement were comparable, with a median of .250 ($p < .05$) for the regular AMTB and a median of .215 ($p < .05$) for the mini-AMTB. Due to the fact that correlations between the two test formats have shown to be significant, the current study used the mini-AMTB.

Because of the fact that this study utilized two level-two Spanish classes of students who had registered for the academic year 2015-2016 by randomization, external validity is possible.

The mini-adapted version of the AMTB was administered to both groups pre- and post-study, with plans to correlate the scores with final semester grades. Difference scores were to be analyzed and a reliability test would have been run using SPSS and raw scores in order to check the reliability against the sample in this study. However, a problem occurred in the data collection process initially which did not allow for this. The teachers, both control and experimental, did not match the pre-mini-AMTB tests to the students properly upon collection, resulting in a completely randomized collection amongst both groups. Only the experimental teacher corrected this data collection process at the end of the study and was able to match the post-mini-AMTB tests to the experimental students.

Reliability tests were run on the pre- and post-mini-AMTB scores of both the experimental and control groups to obtain the cronbach alpha. The alpha coefficients of .810 (pre-mini-AMTB, experimental), .827 (post-mini-AMTB, experimental), .790 (pre-mini-AMTB, control) and .915 (post-mini-AMTB, control), provide evidence of the mini-AMTB scale's reliability in this study.

Pearson correlations were run on the experimental group's post-mini-AMTB scores and other assessments, as well as final grades at the end of the year. This contributed to whether or not the intervention produced lasting effects.

Power Analyses were also run against the results of the Pearson correlations to determine the high or low power behind any significant correlations.

The qualitative aspect assisted in gathering rigorous, credible data that the mini-AMTB may not be able to measure. Validity, according to Creswell (2013), was established via prolonged engagement in the field, triangulation, disconfirming evidence, rich descriptions, and peer debriefing. The credibility of this study was established by the researcher's collection of student voice-recordings, student self-assessments, and the teacher's evaluation of students over the period of eight weeks. The researcher worked in the school during the time of the study, allowing for prolonged engagement in the field. As a result, rapport and mutual trust were developed between the researcher, participating teacher, and participants. In fact, the researcher had been working as a colleague with the participating teacher for ten years.

Triangulation was achieved by corroborating data from multiple sources: post- focus group interview, and students' self-reflective journals. Validity was further established by searching for disconfirming evidence within the data, especially within the post-focus group interview and self-reflective journals. Any disconfirming evidence discovered by the researcher

was identified and reported in the findings. Rich descriptions, providing detailed evidence of students post-focus group interview and self-reflective journals, were used.

Finally, peer debriefing occurred in that qualitative data analyses were shared with two peers external to the study to confirm the interpretations and analyses.

5.0 Results and Discussion

Based on the research questions, the following results are reported. First, upon comparing the motivation, and more specifically, integrative motivation, of the experimental group after repeated experiences in speaking the foreign language via CALL voice-recordings, to that of the control group, significant differences were found. Pearson correlations were run to find powerful correlations between the experimental students' post-mini-AMTB (full) and post-mini-AMTB (integrative motivation) scores and oral midterm and between the post-mini-AMTB (full) and semester grade. Second, quantitative results of how the students in the experimental group as a result of the CALL voice-recordings perform on a traditional real-time test in comparison to the control group are reported. Third, quantitative results comparing the performance of the experimental group and control group on the mid-term exam, final oral exam, final exam, semester grade, and end of year grade are also reported. Fourth, the qualitatively differing ways the experimental and control group of students perceive their motivation and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessments, respectively, are reported.

5.1 Motivation of Control and Experimental Students Measured by Full Mini-AMTB

The Mann-Whitney U tests compared the pre-and post-mini-AMTB results of the control and experimental groups. The objective of these particular comparisons is to analyze the different types of scores between the control group and the experimental group--specifically, to

find whether a significant difference exists between each of the administered scores between the control group and the experimental group. Mann-Whitney U tests were run to measure motivation based on the full version of the pre-and post-mini-AMTB scores.

First, a test was run to find any significant difference in motivation based on the full version of the pre-mini-AMTB scores of both groups testing the hypothesis at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested.

H_0: mean rank between the pre-mini-AMTB scores of the control and the experimental groups are identical.

H_1: mean rank between the pre-mini-AMTB scores of the control and the experimental groups are NOT identical.

Mean Ranks of the pre-mini-AMTB scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	10.23	12.77

Since the p-value of 0.357 is greater than the significance level of $\alpha = 0.05$ and since the z score of -0.920 is with the range of the critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in the full version of the pre-mini-AMTB scores between the control group and the experimental group**.

Next, the post-mini-AMTB (full version) scores were compared between both groups. In this comparison, a test was run to determine whether there is a significant difference between the post-mini-AMTB scores of the control group and the post-mini-AMTB scores of the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested.

H_0: mean rank between the post-mini-AMTB scores of the control and the experimental groups are identical.

H_1: mean rank between the post-mini-AMTB scores of the control and the experimental groups are NOT identical.

Mean Ranks of the post-mini-AMTB scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	8.50	14.50

Since the p-value of 0.030 is less than our significance level of $\alpha = 0.05$ and our z value of -2.172 is outside the range of our critical values of ± 1.96, we must reject H_0, concluding that **there is a significant difference in the post-mini-AMTB scores between the control group and the experimental group.** Thus, post-study, motivation of the experimental group, as measured by the full mini-AMTB, increased in contrast with that of the control group.

Next, the pre-mini-AMTB and post-mini-AMTB scores of the control group alone were tested to see if there was a significant difference between the scores. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: mean rank between the pre-mini-AMTB scores of the control and the experimental groups are identical.

H_1: mean rank between the pre-mini-AMTB scores of the control and the experimental groups are NOT identical.

Mean Ranks of the pre-mini-AMTB scores and the post-mini-AMTB scores of the control group

	Pre-mini-AMTB scores	Post –mini-MTB scores
Mean Rank	10.14	12.86

Since the p-value of 0.324 is greater than our significance level of $\alpha = 0.05$ and our z score of -0.986 is between our critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in pre-mini-MTB scores and post-mini-AMTB scores of the**

control group. Therefore, their motivation did not show any significant movement from pre to post experiment.

Lastly, the pre-mini-AMTB and post-mini-AMTB scores of the experimental group were tested to see if there is a significant difference between both sets of scores. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested.

H_0 : mean rank between the pre-mini-AMTB scores and post-mini-AMTB scores of the experimental group are identical.

H_1 : mean rank between the pre-mini-AMTB scores and post-mini-AMTB scores of the experimental group are NOT identical.

Mean Ranks of the pre-mini-AMTB scores and the post-mini-AMTB scores of the experimental group

	Pre-mini-AMTB scores	Post-mini-AMTB scores
Mean Rank	8.50	14.50

Since the p-value of 0.030 is less than the significance level of $\alpha = 0.05$ and the z score of -2.171 is outside the range of the critical values of ± 1.96, we must reject H_0, concluding that **there is a significant difference in pre-mini-AMTB scores and post-mini-AMTB scores in the experimental group.** It is clear that the experimental group's motivation, as measured by the full version of the mini-AMTB, significantly increased at the end of the study.

5.1.1 Integrative Motivation of Control and Experimental Students Measured by Eight of Eleven Questions on the Mini-AMTB

First, a test was run to find any significant difference in integrative motivation based on the eight pertinent questions from the pre-mini-AMTB scores of both groups testing the hypothesis at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested.

H_0: mean rank between the pre-mini-AMTB (IM) scores of the control and the experimental groups are identical.

H_1: mean rank between the pre-mini-AMTB (IM) scores of the control and the experimental groups are NOT identical.

Mean Ranks of the pre-mini-AMTB (IM) scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	11.47	18.00

Since the p-value of 0.006 is less than the significance level of $\alpha = 0.05$ and since the z score of -2.766 is outside the range of the critical values of ± 1.96, we must reject H_0, concluding that **there is a significant difference in the full version of the pre-mini-AMTB scores between the control group and the experimental group**.

Next, the post-mini-AMTB (IM) scores were compared between both groups. In this comparison, a test was run to determine whether there is a significant difference between the post-mini-AMTB (IM) scores of the control group and the post-mini-AMTB (IM) scores of the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested.

H_0: mean rank between the post-mini-AMTB (IM) scores of the control and the experimental groups are identical.

H_1: mean rank between the post-mini-AMTB (IM) scores of the control and the experimental groups are NOT identical.

Mean Ranks of the post-mini-AMTB (IM) scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	12.40	17.79

Since the p-value of 0.049 is less than our significance level of $\alpha = 0.05$ and our z value of -1.967 is outside the range of our critical values of ± 1.96, we must reject H_0,

concluding that **there is a significant difference in the post-mini-AMTB (IM) scores between the control group and the experimental group.** Thus, post-study, integrative motivation of the experimental group, as measured by the mini-AMTB (IM), increased in contrast with that of the control group.

Next, the pre-mini-AMTB (IM) and post-mini-AMTB (IM) scores of the control group alone were tested to see if there was a significant difference between the scores. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: mean rank between the pre-mini-AMTB (IM) scores of the control and the experimental groups are identical.

H_1: mean rank between the pre-mini-AMTB (IM) scores of the control and the experimental groups are NOT identical.

Mean Ranks of the pre-mini-AMTB (IM) scores and the post-mini-AMTB (IM) scores of the control group

	Pre-mini-AMTB (IM) scores	Post–mini-AMTB (IM) scores
Mean Rank	14.27	16.73

Since the p-value of 0.383 is greater than our significance level of $\alpha = 0.05$ and our z score of -0.872 is between our critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in pre-mini-AMTB (IM) scores and post-mini-AMTB (IM) scores of the control group**. Therefore, their integrative motivation did not show any significant movement from pre- to post-experiment.

Lastly, the pre-mini-AMTB (IM) and post-mini-AMTB (IM) scores of the experimental group were tested to see if there is a significant difference between both sets of scores. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested.

H_0: mean rank between the pre-mini-AMTB (IM) scores and post-mini-AMTB (IM) scores of the experimental group are identical.

H_1: mean rank between the pre-mini-AMTB (IM) scores and post-mini-AMTB (IM) scores of the experimental group are NOT identical.

Mean Ranks of the pre-mini-AMTB scores and the post-mini-AMTB scores of the experimental group

	Pre-mini-AMTB (IM) scores	Post-mini-AMTB (IM) scores
Mean Rank	12.35	15.54

Since the p-value of 0.679 is less than the significance level of $\alpha = 0.05$ and the z score of -0.413 is between the range of the critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in pre-mini-AMTB (IM) scores and post-mini-AMTB (IM) scores in the experimental group.** Though mean ranks show an increase an integrative motivation post-study, it is not a significant increase.

5.1.2 Pearson Correlations Between Experimental Group's Post-Mini-AMTB (full and integrative) Scores and Other Assessments

Pearson correlations were also run between the experimental group's post-AMTB (full), and post-AMTB (IM) scores and the oral midterm exam grade, midterm exam grade, semester grade (December), oral final exam, final exam, and end of year (June) grade. Positive correlations were found between the post-AMTB (full) scores and the midterm oral exam grade, midterm exam grade, and semester (December) grade. That is, the higher a student's scores were on the post-AMTB (Full), the higher their score was on the midterm oral exam, midterm exam, and semester grade.

Power Analyses were also run on all the correlations to find a high power of correlation between the post-AMTB (full) and oral midterm and semester grade, and between the post-AMTB (IM) and oral midterm. This power behind these correlations, and the fact that there are

no correlations between these post-AMTB scores and any of the second semester assessments (oral final, final, traditional, end of year grade), suggest that the positive effects of the intervention on motivation and achievement. Perhaps the correlation would have existed in the second semester assessments if the intervention continued throughout the year. Table 4.6 displays the Pearson correlations and power analyses between the motivation and integrative motivation scores, and other assessments.

Table 4.6 Pearson Correlations of all Post-AMTB Scores and Various Assessments

	Post-mini-AMTB (FULL)	Post-mini-AMTB (IM)
Oral Midterm	$\boldsymbol{R = 0.605}$ $\boldsymbol{p = 0.029}$ **Correlated** $\boldsymbol{(1-\beta) = 0.82}$	$\boldsymbol{R = 0.655}$ $\boldsymbol{p = 0.011}$ **Correlated** $\boldsymbol{(1-\beta) = 0.845}$
Midterm	$\boldsymbol{R = 0.571}$ $\boldsymbol{p = 0.042}$ **Correlated** $\boldsymbol{(1-\beta) = 0.76}$	$\boldsymbol{R = 0.555}$ $\boldsymbol{p = 0.040}$ **Correlated** $\boldsymbol{(1-\beta) = 0.631}$
Oral Final	$R = 0.050$ $p = 0.871$ Not Correlated $(1-\beta) = 0.07$	$R = 0.067$ $p = 0.827$ Not Correlated $(1-\beta) = 0.056$
Final	$R = 0.163$ $p = 0.596$ Not Correlated $(1-\beta) = 0.14$	$R = 0.175$ $p = 0.567$ Not Correlated $(1-\beta) = 0.09$
Traditional	$R = 0.325$ $p = 0.279$ Not Correlated $(1-\beta) = 0.31$	$R = 0.371$ $p = 0.191$ Not Correlated $(1-\beta) = 0.280$
Semester Grade	$\boldsymbol{R = 0.604}$ $\boldsymbol{p = 0.029}$ **Correlated** $\boldsymbol{(1-\beta) = 0.82}$	$\boldsymbol{R = 0.554}$ $\boldsymbol{p = 0.040}$ **Correlated** $\boldsymbol{(1-\beta) = 0.629}$
End of Year Grade	$R = 0.389$ $p = 0.189$ Not Correlated $(1-\beta) = 0.41$	$R = 0.412$ $p = 0.162$ Not Correlated $(1-\beta) = 0.319$

5.2 Control and Experimental Groups' Traditional Real-Time Performance

In this comparison, a test was run to see if there is a significant difference between the traditional oral exam scores of the experimental group and the task 8 scores of the control group. This hypothesis at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the traditional oral exam scores taken by the experimental group and the task 8 scores taken by the control group are identical.

H_1: Mean rank between the traditional oral exam scores taken by the experimental group and the task 8 scores taken by the control group are NOT identical.

Mean Ranks of traditional oral score of the experimental group and the task 8 scores of the control group

	Control Group	Experimental Group
Mean Rank	13.33	16.79

Since the p-value of 0.271 is greater than our significance level of $\alpha = 0.05$ and our z score of -1.100 is within the range of our critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in scores between the control group and the experimental group**. Though a significant difference was not found, the higher mean rank of the experimental group in comparison to the control group indicates that the intervention did not harm or hinder the experimental students in any way.

5.3 Comparisons of Control and Experimental Students' Performance on Various Assessments

In this comparison, tests were run to see if there is a significant difference between the midterm exam scores of the control group and the experimental group. The hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the midterm exam scores of the control and the experimental groups are identical.

H_1: Mean rank between the midterm exam scores of the control and the experimental groups are NOT identical.

Mean Ranks of the midterm exam scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	17.27	12.57

Since the p-value of 0.123 is greater than the significance level of $\alpha = 0.05$ and the z score of -1.542 is within the range of the critical values of ± 1.96 we must fail to reject H_0, concluding that **there is not a significant difference in midterm exam scores between the control group and the experimental group**.

In the next comparison, tests were run to see if there is a significant difference between the final oral exam scores of the control group and the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims that we tested:

H_0: Mean rank between the final oral exam scores of the control and the experimental groups are identical.

H_1: Mean rank between the final oral exam scores of the control and the experimental groups are NOT identical.

Mean Ranks of the final oral exam scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	13.43	15.73

Since the p-value of 0.438 is greater than the significance level of $\alpha = 0.05$ and the z score of -0.775 is within the range of our critical values of ± 1.96 we must fail to reject H_0, concluding that **there is not a significant difference in final oral exam scores between the control group and the experimental group**.

Tests were then run to see if there is a significant difference between the final (June) exam scores of the control group and the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the final June scantron exam scores of the control and the experimental groups are identical

H_1: Mean rank between the final June scantron exam scores of the control and the experimental groups are NOT identical

Mean Ranks of the final June scantron exam scores of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	13.47	15.69

Since the p-value of 0.474 is greater than the significance level of $\alpha = 0.05$ and the z score of -0.716 is within the range of the critical values of ± 1.96, we must fail to reject H_0, concluding that **there is not a significant difference in final June scantron exam scores between the control group and the experimental group**.

In the next comparison, tests were run to see if there is a significant difference between the semester 1 grades of the control group and of the experimental group. This hypothesis was tested at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the semester 1 grades of the control and the experimental groups are identical.

H_1: Mean rank between the semester 1 grades of the control and the experimental groups are NOT identical.

Mean Ranks of the semester 1 grades of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	14.00	16.07

Since the p-value of 0.502 is greater than the significance level of $\alpha = 0.05$ and the z score of -0.671 is within the range of our critical values of ± 1.96 we must fail to reject H_0, concluding that **there is not a significant difference in semester 1 grades between the control group and the experimental group.**

In the last comparison, tests were run to see if there is a significant difference between the semester 2 grades of the control group and of the experimental group. This hypothesis at the $\alpha = 0.05$ significance level. The following are the null and alternative hypothesis claims tested:

H_0: Mean rank between the semester 2 grades of the control and the experimental groups are identical

H_1: Mean rank between the semester 2 grades of the control and the experimental groups are NOT identical

Mean Ranks of the semester 2 grades of the control group and the experimental group

	Control Group	Experimental Group
Mean Rank	12.67	16.62

Since the p-value of 0.184 is greater than the significance level of $\alpha = 0.05$ and the z score of -1.329 is within the range of our critical values of ± 1.96 we must fail to reject H_0, concluding that **there is not a significant difference in semester 2 grades between the control group and the experimental group.**

In all of the aforementioned tests, though no significant difference was found between both groups' various assessments and grades, it is important to note that the intervention did not hinder the experimental students.

5.4 Experimental and Control Students' Perceptions of their Motivation and/or Confidence

Upon a qualitative analysis of the experimental and control students' **post-focus group interview**, the focal descriptive category of students' experience and perceptions of learning with CALL was identified as *Motivation Increase.*

In the experimental post-focus group interview, which included 13 of the 14 experimental students, and regarding the descriptive category of *Motivation/Confidence Increase*, all 13 students reported that they felt more motivated to speak Spanish as a result of the CALL recordings. Of the 21 total utterances on the topic of feeling more motivated, 13 of the

comments attributed the increase in motivation to being able to **listen to their recordings** and use **self-assessments**. They explained that the self-assessments made them more **aware** of their individual errors and actually made them commit their errors to memory to improve going forward. Seven of the 21 remarks attributed their increase in motivation to the ability to hear and fix their errors. One of the students attributed her increase in motivation to the sense of accomplishment she felt as a result of the recordings, *"…it helped with my motivation because when she would tell us what to talk about, we had to think about it and I would, I would KNOW what I was saying, at times, so that made me feel like I KNEW what I was talking about and I knew how to say things and it just, it was better."*

It is clear that the students expressed that the CALL recordings allowed them to develop an awareness of their speaking ability, creating more motivation toward speaking Spanish. The self-assessments were crucial in achieving Chappelle's (2001) criterion of **positive impact** and Doll's (1993) call for r**igor**. The self-assessments coupled with the ability to listen back to all their recordings, allowed the students to actually become aware of their perceived growth over time. This awareness and affective feeling of confidence and/or motivation towards speaking is a positive impact beyond the impact of language learning itself. Similarly, as **rigor** is defined as a revealing of assumptions and a movement toward transformation, it is clear that this was achieved through the post-interviews, and the self-assessments. The students were able to uncover any hidden assumptions they held about themselves and how they feel about speaking Spanish; they were able to address their speaking goals, strengths, and weaknesses through the self-assessments, and they reported their own self-perceived transformations by the end of the study. This awareness of self-transformation is one of the benefits of using self-assessments.

Upon the qualitative analysis of the experimental students' written self-reflective journals (post-study) regarding their perceptions of their experience with CALL-task voice-recordings, *all* of the 14 students responded positively about their experience, and 13 of the 14 students expressed an increase in **motivation and/or confidence.** Only one student made no mention of an increase in motivation or confidence because she never felt a lack of it to begin with. However, many students attributed their increased motivation/confidence to a discovery of their speaking ability through re-listening to their CALL-task recordings and becoming aware of their progress. It is evident that the experimental students themselves discovered value in CALL by the end of the study, reporting yet again (as in the post focus group interview), more motivation and/or confidence.

Finally, regarding the qualitative analysis of the control students' **post-focus group interview**, which included 10 of the 15 participants, only three utterances pertained to motivation and/or confidence, attributing the confidence to "feeling better" with increased speaking experience. While some control students expressed that they perceived a general improvement in their speaking ability as a result of having more experience orally through the completion of the eight traditional oral tasks, only two of the 10 students perceived an increase in confidence. This discrepancy in perception of motivation/confidence between the experimental and control students could be due to the fact that the control students did not self-assess and did not have the chance to listen to themselves speak, and as a result could not become as aware as the experimental students of their growth and progress.

Too, a major distinction in the perceived increase in motivation/confidence is that in contrast with the control students who merely attribute the increase to increased experience, the experimental students highlight the benefits of being able to become aware of their errors, fix

their mistakes, and become better real-time speakers, suggesting a bi-modality transfer. This finding is in line with Payne and Whitney's (2002) study that found a bi-modal transfer from synchronous computer-mediated communication to oral proficiency. Table 4.7 displays the frequency of students' perceptions of motivation/confidence increase, and examples of their different kinds of expressions.

Table 4.7 Students' Perceptions of Motivation/Confidence Increase

Descriptive Category of Students' Experience/Perceptions of Learning	*f*	*Examples of Experimental Students' Expression-Post-FGI*	*f*	*Example of Experimental Students' Expression-Reflective Journal*	*f*	*Example of Control Students' Expression-Post-FGI*
Motivation/Confidence Increase	21	*"Um, it helped my motivation because when you can like see what you're saying and you can go back, you know what you need to fix, so you know that you have to like get better since I want to learn Spanish...because then like it's not just a teacher listening to you and grading on what they think. It's you critiquing yourself."* - Maggy *"My motivation and confidence definitely went up. Um,*	15	*"I can have more motivation knowing I improve each week."* –Maggy *"I have become more confident while speaking. I think using Audacity definitely contributed to this because of the listening and re-recording."* –Linda	*3*	*"I felt better about it... I felt more confident about it.* – Alison "*I've gotten better throughout the different, each assessment, just as long as I kind of practiced more, I get used to it, which I feel better about each time doing it."* - Terrell

		especially with the self-evaluation, I was able to see where my mistakes were and it encouraged me to uh improve myself for Spanish."- Sharon *"...the self-evaluation did um boost my motivation because it like motivated me to fix my mistakes and it just also made me more confident and relaxed about what I was gonna say when I spoke Spanish."* -Jenny		*"I feel much more confident in my speaking Spanish, even in front of a class...By listening to these recordings, I recognize my calmness as I progress."* –Sharon		

The combined qualitative and quantitative results suggest that incorporating Chapelle's (2001) six criteria and Doll's (1993) post-modern curriculum into the foreign language classroom has a positive impact on the students' development of Spanish oral language proficiency. Affectively, the experimental and control students reported an increase in motivation and/or confidence, however the frequency was much lower in the expressions of the control students. This too is supported by the quantitative results that show the experimental group's motivation (full) and integrative motivation scores to be significantly higher than the control group's, both pre- and post-study. Such findings suggest the positive effect of CALL on student motivation, similar to Warschauer's (1996) findings of students' positive attitudes

towards using computers in the foreign language classroom due to the benefits afforded, a feeling of personal empowerment, enhancement of learning opportunities, and achievement, all of which appear in some context within the expressions of the experimental students.

The experimental students also reported the value of self-assessments and listening back to their recordings, suggesting this aided them in recognizing their personal areas of strength and/or weakness. Self-assessment and reflection have been shown to aid students in awareness and metacognition (Alderson, 2005; Chen, 2008; Little, 2007). The usage of both the self-assessments and the self-reflective journal proved to be an integral part of this study, aiding the experimental students in perceptions of achievement and transformation. Such findings are in line with Chang (2005) who found that students using self-regulating strategies, such as self-observation and self-evaluation, became more confident and valued the learning material more than their counterparts who did not use self-regulating learning strategies.

Furthermore, when comparing the scores of the teacher's evaluations and the experimental students' self-assessments, no significance difference was found. This suggests that the students were not overly generous, nor too hard on themselves. Rather, they assessed themselves similarly to how the teacher evaluated them.

Lastly, Mann Whitney U tests were also run to analyze the experimental students' perceptions of their motivation based upon the pre- and post-Motometer tests. The following are the null and alternative claims tested:

H_0 : mean rank between the pre-Motometer scores and post-Motometer scores of the experimental group are identical.

H_1 : mean rank between the pre-Motometer scores and post-Motometer scores of the experimental group are NOT identical.

Mean Ranks of the pre-Motometer scores and the post-Motometer scores of the

experimental group

	Pre-Motometer scores	Post-Motometer scores
Mean Rank	15.12	12.96

Since the p-value of 0.479 is greater than our significance level of $\alpha = 0.05$ and our z score of -0.708 is between our critical values of ± 1.96, we must fail to reject H_0, concluding that there is not a significant difference in pre-Motometer scores and post-Motometer scores in the experimental group. Though these scores did not show any significant change in the perception of the experimental students' motivation, their expressions in the post-focus group interview and self-reflective journals suggest otherwise.

6.0 Implications

The results suggest that the CALL oral task recordings, grounded in SLA through Chapelle's (2001) six criteria, and Doll's post-modern framework, help students develop Spanish oral language proficiency and increase students' motivation and/or confidence towards speaking Spanish. Too, Pearson correlations suggest that increased motivation, based on the scores from the full mini-AMTB, as well as integrative motivation, based on the scores of eight questions from the mini-AMTB, are linked to achievement. This link between integrative motivation and achievement has been confirmed by previous studies (Dörnyei & Clément 2000; Dörnyei & Schmitt, 2001; Hernández, 2006; Masgoret & Gardner, 2003). Too, the positive correlation between integrative motivation and oral achievement is corroborated by Hernandez (2006).

The first implication for teachers of foreign language then, is that CALL oral recordings (in addition to traditional oral assessments and daily oral practice in the classroom) are beneficial to students' oral proficiency development when integrated into the curriculum.

Further, the CALL oral task recordings appear to have a benefit over traditional oral assessments in that they provide evidence to the teacher and students of the students' oral

performance. Such evidence may serve as a talking point between the teacher and student to address areas of strength and/or weakness over time. In contrast, traditional oral performances alone do not allow for such evidence that fosters such critical discussion, reflection, and transformation. Another added benefit of the CALL tasks over the traditional oral tasks is that integrative motivation was shown to be significantly higher in the experimental students than in the control students, both pre- and post-study. It is possible that this was due to the fact that the experimental students knew going into the study that they would be allowed to use a voice-recording software to complete their oral assessments and that they would be able to re-record as needed. This is supported by the fact that their increased integrative motivation was sustained throughout the study, in addition to their expressions in the post-focus group interview and self-reflective journals.

Considering what the experimental students wrote in their self-reflective journals, it is important to note that it is not only the recordings that may have helped them. The majority of the students remarked upon the value of using **self-assessments** alongside the oral task recordings; The self-assessments helped them become aware of their speaking ability, and possibly could be the reason they reported feeling more comfortable and more motivated towards speaking. Thus, teachers of foreign language ought to consider integrating a weekly oral recording accompanied by self-assessments to allow students the opportunity to, not only learn, but to *think* about their own learning. This thinking about their learning, as students commented, causes them to notice patterns in their strengths and weaknesses, and *remember* to address their mistakes in future oral performances. Their own awareness encourages them to take ownership of their learning and provides the opportunity for transformation.

Similarly, the self-reflective journals allowed the students the opportunity to review all of their recordings in one sitting, and reflect on their possible growth. Whereas the self-assessments allowed the students to pay attention to their strengths and/or weaknesses on a singular level, dealing with one task at a time, the self-reflective journal allowed to students to think about their growth as a whole, from Task 1 to Task 8. This led to their perceptions of personal growth with language and affective factors, such as less anxiety and more confidence towards speaking. The findings from both the post-focus group interview and self-reflective journals corroborate Raby's (2007) findings that autonomous learning strategies via instructional computer technology (ICT) increased student motivation by opening new perspectives for language work and increasing autonomy, leading to more learner control over their work. The finding that synchronous or asynchronous computer-mediated activities provide more learner control has also been upheld by Chapelle (2009), and Kern and Warschauer (2000).

Too, **recursion** emerged in the current study through student self-assessments and reflections upon their oral development via maintaining the voice portfolio. Specifically, recursion occurred on three levels. First, the students listened to their initial recording and thought about their language production. This thinking about their own work led them to add, delete, change, and essentially transform their first response. In contrast, a real-time performance would not allow the opportunity to think about their language production at all, nor re-frame their response. Second, the students did not merely receive a grade from their teacher. Rather, they received constructive feedback about their individual language production and they also assessed themselves. Third, recursion occurred through the process of listening to all of their recordings cumulatively, at the end of the study, in order to think about their language production altogether and reflect upon their transformation over the eight-week period. The

benefit of such recursion is apparent in the comments and reflections made by the experimental students in contrast with those of the control students. It is evident that this design fits Doll's explanation that recursion "aims at developing competence---the ability to organize, combine, inquire, use something heuristically" (p. 178). This lends to the argument that future CALL may benefit from employing a similar post-modern framework.

Considering that this study was conducted in just one semester of a second year Spanish course, and it reaped benefits for the students in such a small window of time, one may reason that if the CALL recordings occur throughout the academic school year, or further over the course of one's four-year high school period, the CALL oral task recordings may help students of foreign language develop oral proficiency moving closer to fluency. Thus, the study implies that using CALL for a longer period of time than just 8-weeks, may lend to stronger positive impact. Foreign language classrooms may already be exercising daily oral practice and traditional oral assessments. However, the results of the study suggest that more may be needed to help students' develop oral proficiency, confidence, and decrease anxiety. Therefore, to optimize students' oral proficiency, this study suggests weekly CALL voice-recordings grounded in SLA theory and Doll's post-modern curriculum be integrated into the foreign language class. Further, students should complete self-assessments with each CALL voice-recording, as well as a reflective journal after each semester to document their own perceptions of their learning.

Another implication regarding policy is that schools need to be equipped with technology that supports such a curriculum. That is, schools need to provide computer labs with recording programs like Audacity©, along with the headphones with the attached microphone, that would allow a student to listen and record their responses. In this regard, schools should have

technology personnel available to assist with supplying these needs, as well as instructing the students and teachers on how to use the technology.

Finally, professional development may be needed to instruct foreign language teachers how to design a curriculum that integrates CALL in such a way that benefits the students' oral proficiency. Particular professional development may needed to understand how to implement Chapelle's (2001) six criteria and Doll's (1993) post-modern curriculum to create an effective CALL experience for the students.

7.0 Limitations

It is highly important to note that though the findings suggest that the CALL recordings helped develop Spanish oral proficiency, increased motivation and led to achievement, the sample size was quite small. Thus, it is recommended that additional research is conducted with a larger sample size to provide more power behind the results.

Secondly, though the reliability tests of the mini-AMTB produced a strong alpha coefficient, Gardner (2010) has advised against using the mini-AMTB when the full AMTB can be used instead. Thus, a future study employing the full AMTB both pre- and post-study may render stronger results.

Thirdly, the post-focus group interviews had to be conducted with a different amount of students than the total amount of participants; the control's post-focus group interview consisted of 10 out of the 15 participants, and the experimental group's interview consisted of 13 out of the 14 total experimental participants. This was based upon the control or experimental teacher's discretion of which students were available to meet for the interviews at the given times and/or student absences. Thus, if this study were to be repeated, it would be best if all the participants

could be interviewed, or at least the same amount of students in both groups. Furthermore, additional qualitative analyses via individual interviews may provide more in-depth results.

Also, the fact that there were two different teachers for both groups could influence the results. Teacher impact is a reality and can influence students' perceptions negatively or positively. Although, all the control students in the post-focus group interview reported feeling more capable in their ability to speak Spanish, only two students mentioned feeling more confident in their speaking. This discrepancy in the frequency between the two groups' expressions of motivation/confidence increase would be more reliable if both groups came from the same teacher. This would factor out the influence of teacher impact on the results of the study.

Regarding data collection with future studies, it is highly necessary to offer the participating teacher or teachers professional development as to how data must be collected. Because the data was not collected in such a way that the results of the pre- and post-mini-AMTB scores could be matched to *all* participants, correlation tests could only be run on the post-mini-AMTB scores of the experimental group, rendering a smaller sample size, and making it impossible to run correlations with the control students' mini-AMTB scores and various assessments. Thus, a future study should be vigilant to ensure that either the researcher is present to collect the data him/herself, or professional development takes place with the cooperating teacher(s).

Also, one student in the study revealed in his self-reflective journal that he didn't feel he had enough time in the class period to find value in the re-recording option afforded by the voice-recording software. Though only one student reported this, it is important to ensure that students in future studies are given adequate time to complete the task and re-record as needed.

Future studies ought to control for the time allotted to the students to utilize the software, and ensure that they are given the same amount of time with each task as their feeling rushed could skew the results and defeat the purpose of incorporating a learner-centered CALL pedagogy.

Another limitation exists in that saving audio files did not work properly. The technology support director at the school had to be called upon to assist in making sure students could save their work. This troubleshooting took up some of the class time, but was resolved after the initial incident. Future studies must make sure all computers used are up to date and issues with saving files will not arise. Technology support personnel should test and confirm the process of saving the audio files on each computer before the students use them. The teacher and students should also be instructed on how to use the software and save audio files with a practice run before beginning the study.

Finally, this study was conducted with participants who had just begun their second year of learning Spanish at the high school level, and it only lasted for the duration of one semester (eight weeks). It may be beneficial to extend the study to one full year. Beyond that, stronger evidence may be found if the study followed the same students from their second year through their fourth year. The difficulty however in that length of time would be following the same group of students because the majority of high school students do not choose to proceed to the fourth year of Spanish. Thus, it is recommended to first replicate this study for the duration of one full year to see if similar results are found.

CHAPTER 5 CONCLUSIONS OF THE STUDY

1.0 Introduction

This study is a trilogy of articles that explore the effect of the integration of computer assisted language learning (CALL) voice-recordings, grounded in second language acquisition (SLA) theory and a post-modern framework, on high school learner's Spanish oral proficiency. The study focuses on the development of foreign language oral proficiency by integrating a learner-centered CALL pedagogy, to decrease anxiety and increase integrative motivation towards speaking in the foreign language.

2.0 Summary of Article One

The purpose of the first article is to determine the effect of integrating computer-assisted language learning (CALL) with a voice-recording software into a Spanish curricular unit of study in order to improve native English speakers' foreign language oral proficiency. Four research questions guide this study: 1.) How do CALL tasks grounded in SLA theory and Doll's post-modern framework elicit students' meaningful output related to specific areas of growth or weakness? 2.) How do high school students perceive their experiences with CALL task voice-recordings to develop their Spanish oral proficiency? 3.) What are the significant differences based on the scores students obtained for each of the CALL task voice-recordings from one to eight that determined students' Spanish oral proficiency? 4.) How does CALL as tool, medium, and tutor, grounded in SLA theory and Doll's post-modern framework enhance high school students' Spanish oral proficiency? This was a mixed method study that used an intervention to engage students in voice-recordings of their oral language using eight successive CALL tasks. A post-intervention focus group interview and self-reflective journals were used to identify the qualitatively differing ways the students perceived their

experiences using the CALL curricular unit for developing their Spanish oral proficiency. The student scores for each of the eight CALL task voice-recordings were collected to assess the development of students' oral proficiency.

The study is significant because it contributes to the computer-assisted language learning literature by using technology as a tool, medium, and tutor for oral proficiency development in the high school classroom setting. Respectively, oral proficiency development using this study indicates a need to incorporate Chapelle's six CALL criteria and Doll's post-modern framework to the foreign language curriculum---using technology in a way that is meaningful. Because voice-recordings over time show evidence on the improvement of oral proficiency, this study contributes to the Computer-Assisted Language Learning and Second Language Acquisition literature. Voice-recording CALL technology serves as a valuable tool for teachers to aid high school students' oral proficiency development in the foreign language classroom. Students' perceptions of the use of CALL providing insights into the positive ways learners have experienced CALL should inspire foreign language teachers to use learner-centered CALL, as tool, medium and tutor, to improve oral language proficiency. The study is anchored in the second language acquisition theory (Chapelle, 2001) as in her CALL study, and post-modern curriculum framework (Doll, 1993) to improve oral Spanish language proficiency. The qualitative results of the CALL tasks oral recordings revealed that the students' Spanish oral language proficiency meaningful output was high, medium, or low. Specific areas of students' growth in verb conjugation or weakness in pronunciation, expressions and vocabulary, and grammatical structures were also identified. The qualitatively differing ways students perceived CALL task recordings were as follows: anxiety decrease, motivation and confidence increase, and speaking improvement.

Friedman's tests were run to find significant differences in the students' oral proficiency from one to eight consecutive tasks. The p-values 0.003, 0.007, 0.002, 0.003, and 0.007 of the students' scores on CALL tasks (2, 4, 5, 6, and 7) respectively, when compared to task 8, show a significant difference. Too, these quantitative results indicate that students' meaningful output significantly improved by the time they reached the last task. The study implied CALL task oral recordings grounded in SLA through Chapelle's (2001) six criteria, and Doll's post-modern theory, and accompanied by self-evaluation and teacher feedback, help students develop oral proficiency, archive meaningful output, monitor their own learning, and experience lower anxiety, higher motivation, and confidence towards speaking Spanish.

3.0 Summary of Article Two

Purpose of this study is to determine the effect of computer assisted language learning (CALL) voice-recordings on high school students' anxiety and the correlation between anxiety and achievement. Four research questions guide this study: 1.) After repeated experiences in speaking the foreign language, via CALL voice-recordings, will foreign language anxiety decrease in the experimental group of students as compared to the control group? 2.) How do the students in the experimental group as a result of the CALL voice-recordings perform on a traditional real-time oral performance in front of the **class,** in comparison to the control group? 3.) How do the students in the experimental group as a result of the CALL voice-recordings perform on the mid term exam, final oral exam, final exam, semester grade and end of year grade in comparison to the control group? 4.) How do both experimental and control group of students perceive their anxiety levels and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessment, respectively?

Using a mixed-methods approach, two Spanish level-two classes were randomly assigned as experimental and control. While learning oral communication in the control group is typical, calling for oral assessment by the teacher in real time, students in the experimental group created an e-portfolio of his/her CALL voice-recordings using a series of real-world contextual tasks designed by Second Language Acquisition (SLA) theory and a post-modern framework. The Foreign Language Classroom Anxiety Scale (FLCAS) that measures state anxiety in a specific situation was used as the pre- and post-test to determine the effect of CALL on anxiety in Spanish oral communication for both groups. FLCAS data were collected and analyzed using Mann-Whitney U tests comparing both groups' anxiety levels.

This study is significant because respectively, oral development using this study demonstrates a need to incorporate a post-modern approach to the foreign language curriculum---using technology in a way that is meaningful. If voice-recordings over time reduce anxiety, this study may contribute to the Computer-Assisted Language Learning literature. Voice-recording technology might serve as a valuable tool for teachers to alleviate student anxiety in the development of oral communication in the foreign language classroom. Further, while most foreign language anxiety studies are quantitative in design (Liu & Jackson, 2008; Pichette, 2009; Sparks & Ganschow, 2007), this study also incorporated qualitative analysis (Frantzen & Magnan, 2005; Hewitt & Stephenson, 2012) to gain new perspectives on student anxiety. This study also aims to fill the gap of the few studies (Tennant & Gardner, 2004) that incorporate technology use and anxiety in language learning.

This study anchors itself upon Horwitz, Horwitz, & Cope's (1986) conceptual model of foreign language anxiety, the second language acquisition theory (Chapelle, 2001) as in her CALL study, and post-modern curriculum framework (Doll, 1993) to improve Spanish language

proficiency and decrease foreign language anxiety. Mann-Whitney U tests were run to find significant differences in the experimental group's anxiety in comparison to the control group's anxiety, both pre-and post study. Pearson correlations were run to find that a strong correlation exists between post-FLCAS scores and students' achievement. Post-focus group interviews were conducted with students of both groups in order to corroborate the results of the FLCAS. The results of the post-focus group interviews and self-reflective journals show a decrease in anxiety by the end of the study, corroborating the negative correlation found between anxiety and achievement. The study implied that increased oral communication experience leads to decreased anxiety, CALL oral tasks specifically help in decreasing anxiety towards speaking, and such decrease in anxiety leads to achievement on other assessments.

4.0 Summary of Article Three

The purpose of this study is to determine the effect of computer assisted language learning (CALL) voice-recordings on high school students' integrative motivation and its correlation with achievement in Spanish oral communication Four research questions guide this study: 1.) After repeated experiences in speaking the foreign language, via CALL voice-recordings, will motivation, and more specifically, integrative motivation, increase in the experimental group of students as compared to the control group? 2.) How do the students in the experimental group as a result of the CALL voice-recordings perform on a traditional real-time oral performance in front of the **class,** in comparison to the control group? 3.) How do the students in the experimental group as a result of the CALL voice-recordings perform on the midterm exam, final oral exam, final exam, semester grade and end of year grade in comparison to the control group? 4.) How do both experimental and control group of students perceive their

motivation levels and oral proficiency based on their experience with CALL voice-recordings and traditional oral assessment, respectively?

This study anchors itself upon Gardner's (1985) socio-educational model for understanding foreign language motivation, the second language acquisition theory (Chapelle, 2001) as in her CALL study, and post-modern curriculum framework (Doll, 1993) to improve Spanish language proficiency and increase integrative motivation.

Two Spanish level-two classes were randomly assigned as experimental and control. While learning oral communication in the control group is typical calling for oral assessment by the teacher in real time, students in the experimental group created an e-portfolio of his/her CALL voice-recordings using a series of real-world contextual tasks designed by Second Language Acquisition (SLA) theory and a post-modern framework. The Mini-Attitude and Motivation Test Battery (AMTB) that measures motivation was used as the pre- and post-test to determine the effect of CALL on integrative motivation in Spanish oral communication for both groups. Mini-AMTB data were collected and analyzed using Mann-Whitney U tests comparing both groups' integrative motivation levels.

Mann-Whitney U tests were run to find significant differences in the experimental group's integrative motivation in comparison to the control group's integrative motivation, both pre- and post-study. Pearson correlations were run to find that a strong correlation exists between post-mini AMTB scores and students' achievement. Post-focus group interviews were conducted with students of both groups, and experimental students completed a post-study reflective journal in order to corroborate the results of the mini-AMTB. The results of the post-focus group interviews, and experimental students' reflective journals, show an increase in motivation and confidence by the end of the study, corroborating the positive correlation found between

integrative motivation and achievement. The study implied that increased oral communication experience leads to increased integrative motivation, CALL oral tasks specifically help to increase motivation towards speaking, and such increase in motivation leads to achievement on other assessments.

APPENDIX A

Analytic Rubric

Analytic Scoring Guide for Speaking Products – Copyright © by The McGraw-Hill Companies, Inc.

Vocabulary	Grammar	Pronunciation	Message Content
3 Vocabulary is generally accurate and appropriate to the task; minor errors, hesitations, and circumlocutions may occur.	4 Grammar may contain some inaccuracies, but these do not negatively affect comprehensibility.	4 Completely or almost completely comprehensible; pronunciation errors, rhythm and/or intonation problems do not create misunderstandings.	4 Relevant, informative response to the task. Adequate level of detail and creativity.
3 Vocabulary is usually accurate; errors, hesitations and circumlocutions may be frequent.	3 Some grammatical inaccuracies may affect comprehensibility; some control of major patterns.	3 Generally comprehensible, but pronunciation errors, rhythm and/or intonation problems may create misunderstandings.	3 Response to the task is generally informative; may lack some detail and/or creativity.
2 Vocabulary is not extensive enough for the task; inaccuracies or repetition may be frequent; may use English words.	2 Many grammatical inaccuracies may affect comprehensibility; little control of major patterns.	2 Difficult to comprehend because of numerous pronunciation errors, rhythm, and intonation problems.	2 Response incomplete, lacks some important information.
1 Vocabulary inadequate for most basic aspects of the task.	1 Almost all grammatical patterns inaccurate, except for a few memorized patterns.	1 Practically incomprehensible.	1 Response not informative; provides little or no information.
0 No response.	0 No response.	0 No response.	0 No response.

APPENDIX B

Students' Meaningful Output in Tasks 7 and 8

In Task 7, when asked to describe his favorite restaurant and foods to eat there, Robert's high meaningful output appears in the following utterance:

> *Mi restaurante favorito es Red Hots. La comida es muy bien y la tarifa son muy pequeno. La restaurante es pequeño, pero es muy bonita. Las personas en el restaurante son simpáticos y los meseros son simpáticos. Yo y mis amigos fui al Red Hots muchas tiempas y comimos muchas comida./ My favorite restaurant is Red Hots. The food is very well and the bill are very small. The restaurant is small, but it is very beautiful. The people in the restaurant are nice, and the waiters are nice. Me and my friends I went to the Red Hots many (not a word), and we eat a lot of food.*

The meaning created from his response is,

> *My favorite restaurant is Red Hots. The food is good, and it is very cheap. The restaurant is small, but it is very beautiful. The people in the restaurant are nice, and the waiters are nice. My friends and I have gone to Red Hots many times, and we eat a lot of food.*

Robert achieved a full score of 16 points.

Maggy's mid-range meaningful output in Task 7 manifests itself in the following utterance:

> *Mi restaurante favrito es Olive Garden porque la comida es muy bien y delicioso. La personas y meseros a Olive Garden están simpática. Olive Garden es muy bonita y muy personas asistan. La tarifa de la comida es no mucho dinero. / My (not a word) restaurant is Olive Garden because the food is very well and delicious. The people and waiters at Olive Garden are nice. Olive Garden is very beautiful and very people attend. The food bill is not a lot of money.*

The meaning conveyed is, *"My favorite restaurant is Olive Garden because the food is very good and delicious. The people and waiters at Olive Garden are nice. Olive Garden is very beautiful and a lot of people help. The food bill is not a lot of money."* Maggy earned 14 points, placing her in the mid-category.

Considering Task 8, Nadine's high-range meaningful output, identifying certain foods in images shown to her and describing how frequently she eats them, appears in the following utterance**:**

> *Yo como la chuleta de cerdo con frecuencia porque me gusta mucho y yo me gusta la lancosta mucho, pero no me como mucho. Me como a veces. No me gusta el aceite. Me como..no nunca me como porque es muy mal. / I eat pork chops frequently because I like them a lot, and I like the (not a word) a lot, but I don't eat myself a lot. I eat myself sometimes. I don't like oil. I never eat it because it is very bad.*

The meaning conveyed in her response is, *"I eat pork chops frequently because I like them a lot, and I like lobster a lot, but I don't eat it a lot. I eat it sometimes. I don't like oil. I never eat it because it is very bad."* Nadine achieved a full score of 16 points.

Danielle's mid-range meaningful output produced in Task 8 is as follows: *"Yo _ a veces el cordero porque me gusta el cordero. No me gusta el langonsta. Yo nunca _ come. Yo me gusta vinagre en mi salada."/ "I sometimes lamb because I like lamb. I don't like the (not a word). I never ate. I like vinegar in my (not a word)."* The meaning created in her response is, "*I sometimes eat lamb because I like lamb. I don't like lobster. I never ate it. I like vinegar in my salad."* Danielle's response earned 13 points, placing her in the mid-category.

APPENDIX C

Meaningful Output in Tasks 5 and 6

In Task 5, which asked the students to first listen to their friend's (role-played by the teacher) five questions about an upcoming trip, and then respond, samples of high, mid, and low-range meaningful output were found. Maggy created a sample of high-range meaningful output with the following responses to the five questions:

1. *Tengo un billete de ida y vuelta porque voy a la Venezuela y volver./ I have a round-trip ticket because I go to Venezuela and to return.*
2. *No necesito transbordar porque uno tren es necesito. / I don't need to change trains because one train is is need.*
3. *Tengo un billete de segunda clase. / I have a second-class ticket.*
4. *Si, como en el coche cafetería. / Yes, I eat in the cafeteria car.*
5. *Subo el tren a las dos y media. / I get on the train at two-thirty.*

The meaning created in Maggy's response is as follows:

1. *I have a round-trip ticket because I go to Venezuela and return.*
2. *I don't need to change trains because one train is necessary.*
3. *I have a second-class ticket.*
4. *Yes, I eat in the cafeteria car.*
5. *I get on the train at two-thirty.*

Her response achieved a score of 16 points.

Jenny produced a mid-range response as follows:

1. *Yo necesito un billete sencillo./ I need a one-way ticket.*
2. *Tienes transbordar por el tren./ You have to change trains for the train.*
3. *Yo necesito un clase seguinda./ I need a (not a word) class.*
4. *Si, yo como en el buferia en el tren. / Yes, I eat in the (not a word) in the train.*
5. *Yo subir el tren a las ocho y media./ I to get on the train at eight thirty.*

The meaning Jenny created is:

1. *I need a one-way ticket.*
2. *I have to change trains.*
3. *I need a second-class ticket.*

4. *Yes, I eat in the train cafeteria.*
5. *I get on the train at eight thirty.*

Jenny's response earned a score of 14 points.

Sara's low-range meaningful output appears in the following response:

1. *Cuarto el billete es un bileta. / Quarter the ticket is a (not a word).*
2. *Yo mi transbordar es un tren. / I to change trains myself is a train.*
3. *[no response, muttered sounds] / [-]*
4. *Si. Tu compren en el cafeteria. [muttered sounds] / Yes. You they buy in the cafeteria.*
5. *[muttered sounds] / [-]*

The meaning Sara created is:

1. *I buy the one-way ticket.*
2. *I change trains."*
3. *[-]*
4. *Yes. You eat in the cafeteria.*
5. *[-]*

Sara's response earned a score of 8 points.

In Task 6, the students were asked to first listen to their friend's (role-played by the teacher) questions about what they missed in class, and they had to respond using the preterite (past) tense. Students created high, mid, and low-range meaningful output. Luke, for example, created high-range meaningful output with his following response:

1. *Si, miré la pelicula en la clase de historia./ Yes, I watched the movie in history class.*
2. *Sí, Señora Smith coleccionó la tarea./ Yes, Mrs. Smith collected the homework.*
3. *La...leí Romeo y Juliet en la clase de literatura. / I read Romeo and Juliet in literature class.*
4. *La clase de ciencia fue facil. / Science class was easy.*
5. *Si, tomamos el examen en la clase de matemáticas./ Yes, we took the test in math class.*

The meaning conveyed in Luke's response is:

1. *Yes, I watched the movie in history class.*
2. *Yes, Mrs. Smith collected the homework.*
3. *I read Romeo and Juliet in literature class.*
4. *Science class was easy.*

5. *Yes, we took the test in math class.*

He achieved a perfect score of 16 points.

Jenny created a sample of mid-range meaningful output, responding as follows:

1. Si, yo necesito el pelicula en el clasa de historia./ Yes, I need the movie in history *class.*
2. Sí, Señora Smith colecta...colecto la...el tierra...tarea./ Yes, Mrs. Smith *collects...collected the...the land...homework.*
3. Si, yo leísto el lectura en el clase./ Yes, I you read [past] the reading in class.
4. Si, fui al clase de ciencia y Donald.. / Yes, I went to Ms. Donald's science class.
5. Si, yo tengo el examenen en mathmatecas./ Yes, I have the (not a word) in (not a word).

Jenny's utterance created the following meaning:

1. *Yes, I watched the movie in history class.*
2. *Yes, Mrs. Smith collected the homework.*
3. *Yes, I read the reading in class.*
4. *Yes, I went to Ms. Donald's science class.*
5. *Yes, I had the math test.*

She earned a score of 13 points.

Joseph created a sample of low-range meaningful output in Task 6, with the following response:

1. *Si. Si, la _ _ historia es tarea. Es muy tarea./ Yes. Yes, history is homework. It is very homework.*
2. *2. Sí, Señora Smith...e Señora Smith coleccionó la tarea./ Yes, Mrs. Smith collected the homework.*
3. *En la clase de lectura, yo miró the lesson y la kuzco./ In reading class, I read the lesson and the Kuzco.*
4. *La clase de ciencias, nosotros fuimos hacemos y completar the worksheet./ In science class, we were we did and to complete the worksheet.*
5. *Si, la exámen en la _ _ matemáticas es muy dificil./ Yes, the test in the math is very difficult.*

Joseph was able to create the following meaning:

1. *Yes, history class has lots of homework.*
2. *Yes, Mrs. Smith collected the homework.*
3. *In literature class, I read the lesson and Kuzco.*
4. *In science class, we were doing the worksheet.*

5. *Yes, the test in math class is very difficult.*

His response earned a score of 10 points.

APPENDIX D

Students' Errors

Laura also produced a lower frequency of verb conjugation errors in Task 1:

> *Me despuerto a las once. Me ducho y mi pono la ropa. Mi lavo los dientos y como dieciuno. Miro el Netflix y lio un libro. En lunes a viernes me desperto a las seis y mi pono mi uniforme. Voy a la escuela. Después de la escuela voy _ mi casa y hago mi tarea. Mi hermano juega el fútbol, y mi hermana habla espanol y mira Netflix./ I [not a verb] myself at eleven. I shower and my I [not a verb] my clothes. I wash my teeth and eat [not a word]. I watch Netflix and mess a book. On Monday to Friday I [not a verb] myself at six and my I [not a verb] my uniform. I go to school. After school I go my house and I do my homework. My brother plays soccer and my sister speaks Spanish and watches Netflix.*

Laura made errors with some irregular verbs. The first person form of "despertarse" is "me despierto," yet she used two, incorrect, forms of the verb: despuerto and desperto. The first mistake suggests that she recognizes that it is a stem-changing verb but doesn't know the change itself. She also had difficulties with "ponerse," a highly irregular verb in the first-person; she uses "pono" (normal conjugation) when she should use "pongo" (correct, irregular conjugation). Even with her errors however, the meaning that is created by her response is:

> *I wake myself up at eleven. I shower and I put on my clothes. I wash my teeth and eat breakfast. I watch Netflix and read a book. Monday through Friday I wake myself up at six and put on my uniform. I go to school. After school I go to my house and I do my homework. My brother plays soccer, and my sister speaks Spanish and watches Netflix.*

The teacher evaluated her response with a complete score of 16 points. Understanding the complexity of using reflexive verbs for the first time aids in justifying the overall frequency of verb conjugation errors in Task 1.

It also follows that when the students revisited this concept of using reflexive verbs in Task 2, the total frequency of verb conjugation errors dropped to 32. Task 2 again required the usage of reflexive verbs, but this time, the students had to first interview a friend about their

daily routine and then describe their partner's daily routine, using the third-person. Sara's response contains a high frequency of verb conjugation errors in Task 2:

> *Danielle se depertarse in seven en la manaña. Danielle se pones pantalones, blusa y zapatos. Danielle se lavas el pelo. Danielle se juegas el beisbol con sus amigas. Danielle se acuesas en one o'clock in the el noche. / Danielle to wake herself up herself (not a word) (not a word) in the morning. Danielle you put on her pants, blouse, and shoes. Danielle you wash wash. Danielle you wash her her hair. Danielle you play with herself baseball with her friends. Danielle you (not a word) herself in (not a word) or (not a word) (not a word) (not a word) the night.*

All of Andrea's errors with verbs involved conjugation. Andrea left "despertarse" in the infinitive form instead of conjugating it into the third person "se despierta"; she also added the third person reflexive pronoun "se" before the infinitive, which already had the same reflexive pronoun on the end of the infinitive and made it redundant. She used the second person form of "ponerse" ("to put on"), "se pones" ("You put on her"), instead of "se pone" ("she puts on"); she made the same mistake by using "se lavas" ("you wash her") instead of "se lava" ("she washes herself"), "se juegas" ("you play with her") instead of "juega" ("she plays"), and "se acuesas" ("you [not a word] her") instead of "se acuesta" ("she puts herself to bed"). She also erroneously gave the non-reflexive verb "jugar" ("to play") a reflexive pronoun. This too, is a common error among new learners of reflexive verbs; they tend to place a reflexive pronoun before verbs that do not require them. Yet, even with such errors, she created the following meaning: *"Danielle wakes herself up at seven in the morning. Danielle puts on pants, blouse and shoes. Danielle washes herself. Danielle washes her hair. Danielle plays baseball with her friends. Danielle goes to bed at one in the morning."* Andrea's response earned a score of 13.

A second sample with a lower frequency of verb conjugation errors in Task 2 is Jenny's:

> *Theresa_ despierta son las ocho. Se pone la camiseta y los pantalones. Se pieno el pelo. Theresa jugar los deportes y se acuesta el nueve y media./ Theresa wakes up at eight. She puts on a t-shirt and pants. She (not a word) her hair. Theresa to play sports and goes to bed at nine thirty.*

Jenny made errors with irregular, stem-changing verbs. She incorrectly conjugated the third person "peinar" as the first person "pieno" instead of "piena." She left "jugar" in the infinitive form instead of conjugating it into the third person "juega." She also forgot to add the reflexive pronoun "se" to the conjugated "despertarse," which changes the meaning from "to wake up oneself" to "to wake up" and is incorrect in Spanish. Still, she produced the following meaning: "*Theresa wakes up at eight. She puts on a t-shirt and pants. She brushes her hair. Theresa plays sports and goes to bed at nine thirty."* Jenny earned a score of 13 points.

In contrast with Task 8, it is clear that students' verb conjugation errors dropped to just seven. The answer to *why* that may be lies in revisiting the task itself. In Task 8, the students had to identify certain types of food and tell how often they eat those foods. One may argue that the students may have greatly improved in verb conjugation simply because they didn't have to use any complex verb forms. While that may be true, one may also argue, however, that Task 6 presented a complexity of verb forms in the requirement of using the preterite (past tense). Yet still, students' verb conjugation errors greatly decreased from 49 in Task 1 to only 19 in Task 6. According to their responses, it is clear that students' verb conjugation errors decreased by the end of the study and students were able to create meaning regardless of verb conjugation errors.

Surprisingly, the highest frequency of *Grammar and Structure* errors occurred in Task 7, in which students were asked to describe their favorite restaurant and identify different types of food served at their favorite restaurant. Some examples of the types of *Grammar and Structure* errors include using the English syntactical construction "adjective-noun" instead of the correct Spanish construction "noun-adjective", mixing up when to use feminine versus masculine definite articles and singular versus plural definite articles, and when to use an adjective versus

an adverb. Such common grammatical errors, however, do not take away from constructing meaning and are expected to occur frequently in just the second year of learning Spanish.

One student sample that provides examples of common grammar and structure errors students made is Nadine's. In Task 7, she responded:

> *Mi restaurante favorito es la Cafe de Roma en Detroit. Es muy muy muy delicioso comidas y es un muy bonito restaurante. Las meseros es muy muy simpático, y muy bueno servicio. La restaurante tiene mas comidas. Tiene comidas pasta y ravioli y pan tostado. Mi favorito es ravioli. Es muy muy delicioso y un muy bueno restaurante. / My favorite restaurant is the Roma Cafe in Detroit. It is very delicious food, and it is a very, very, very beautiful restaurant. The waiters is very, very nice, and there is very good service. The restaurant has a lot of food. It has foods pasta, ravioli, and toasted bread. My favorite is ravioli. It is very, very delicious, and it is a very good restaurant.*

Nadine used the English syntactical construction "adjective-noun" instead of the correct Spanish construction "noun-adjective" multiple times: she used *"Es muy muy muy delicioso comidas"* instead of the correct phrase *"Hay comida muy muy muy [deliciosa]"* ("There is very, very, very delicious food"), *"muy bonito restaurante"* instead of *"restaurante muy bonito"* ("very beautiful restaurant"), *"muy bueno servicio"* instead of *"servicio muy bueno"* ("very good service"), and *"muy bueno restaurante"* instead of *"restaurante muy bueno"* ("very good restaurant"). She used the plural feminine definite article *"las"* instead of the plural masculine definite article *"los"* to describe *"meseros"* ("waiters"); she used the singular masculine adjective *"simpatico"* instead of its plural masculine form *"simpaticos"* to describe the same word. She used the singular feminine definite article *"la*" instead of the singular masculine article *"el"* to describe *"restaurante"* ("restaurant"). These errors in no way detracted from the meaning she made:

> *My favorite restaurant is the Roma Cafe in Detroit. There is very delicious food, and it is a very, very, very beautiful restaurant. The waiters are very, very nice, and there is very good service. The restaurant has a lot of food. It has pasta, ravioli, and toasted bread. My favorite is ravioli. It is very, very delicious, and it is a very good restaurant.*

Nadine's response earned a score of 15 points.

The second highest frequency of errors among the tasks occurred in the category of *Expression and Vocabulary*. The most errors of this type presented themselves in Task 5, in which the students were asked five questions about a fictional train trip to visit their cousins in Canada. The students had to rely solely on their listening skills because the questions were not presented in written form. The teacher posed each question one at a time, as the students recorded their responses to each one before moving on to the next question. The teacher specifically modeled this task after the Spanish AP exam formats. Table 2.8 displays the five questions the teacher asked, along with the translation of each question.

Teacher's five questions posed to students in Task 5

Question	**Translation**
1. Tienes un billete de sencillo o ida y vuelta?	Do you have a one-way or roundtrip ticket?
2. Tienes que transbordar?	Do you have to change trains?
3. Tienes un billete de primera clase o segunda clase?	Do you have a first-class or second-class ticket?
4. Vas a comer en el coche cafetería?	Are you going to eat in the cafeteria car?
5. A que hora subes el tren?	At what time do you board the train?

The greatest amount of *Expression and Vocabulary* errors students made in Task 5 consisted of incorrect phrasing to express need, incorrect phrasing of "round-trip" by selecting the wrong word for "returning", omitting the word "que", omitting definite articles or replacing them with other words that sound like them, saying *"o"* (or) instead of *"y"* (and), and constructing incorrect phrases. Similar to the aforementioned kinds of errors, these were minor *Expression and Vocabulary* errors that did not detract from constructing overall meaning. Likewise, these kinds of errors may be expected in the second year of learning Spanish again,

Nadine's sample provides examples of such errors, as she responded to Task 5 with the following:

> 1. *Yo quiero un billete de ida regreso porque necesito ir a mi… la casa de mi primo y ira a mi casa. /* I want a going I return ticket because I need to go to me… to my cousin's house and she/he will go to my house.
>
> *2. No tengo _ transbordar. Necesito un tren para gran a _ casa de mi primo. /* I don't have to change trains. I need a train great to my cousin's house.
>
> *3. Yo tengo un billete de primera clase porque me gusta el primero clase o es no muy diferente de la segunda clase. Es más o menos bueno./* I have a first-class ticket because I like the first-class, or it is not very different from second class. It is more or less better.
>
> *4. Yo voy a comer en la coche cafetería porque es un muy muy largo tiempo en el tren, y yo soy muy necesito comer am tiempo. /* I am going to eat in the cafeteria car because it is a long time in the train, and I am very needed to eat at (not a word) time.
>
> *5. Yo suyo el tren a la doce porque necesito ir a la casa de mi primo a las tres. /* I hers/his the train at twelve because I need to go to my cousin's house at three.

This student used the phrase *"soy muy necesito"* ("I am very I need") instead of the correct word *"necesito"* to say "I need." She used the phrase "*ida regresa"* ("going returning") instead of the correct phrase *"ida y vuelta"* to say "round-trip"(in Spanish, literally "going and returning"); both "regresa" and "vuelta" mean "returning," but in this phrase only "vuelta" is correct. She forgot the word *"que"* in the phrase *"tengo [que] transbordar,"* changing its meaning from "I have to change [trains]" to essentially "I have change [trains]," which is ungrammatical in Spanish. She used the word *"gran"* ("great/grand") instead of, presumably, *"ir"* ("to go"). She said *"o"* ("or") instead of *"y"* ("and"). She said *"am tiempo"* ("[not a word] time"), presumably meaning "*at that time*"; the correct phrase is "*en ese momento*" (literally "in that moment"). Despite these errors, Nadine was able to create the following meaning:

1. *I want a round-trip ticket because I need to go to my cousin's house and go to my house.*
2. *I don't have to change trains. I need a train to go to my cousin's house.*
3. *I have a first-class ticket because I like the first-class, and it is not very different from second class. It is more or less better.*
4. *I am going to eat in the cafeteria car because it is a long time in the train, and I will really need to eat at that time.*
5. *I get on the train at twelve because I need to go to my cousin's house at three.*

The teacher evaluated this response with a score of 15 points.

Lastly, the lowest frequency of errors among all eight tasks occurred under the category of *Mispronunciation*. The highest frequency of mispronunciation occurred in Task 4, in which the students were given the following prompt written in English: *Imagine you are traveling to see your cousins in California. You have two hours before your train leaves, so you decide to call your mom to pass the time. Your mom wants to know what the train station looks like. Use the vocabulary you've learned to describe the train station.* Expectedly, the most commonly mispronounced words were the new vocabulary words learned in the unit. Once more, mispronunciation did not detract from constructing meaning; the words they meant to use could be understood through context despite slight pronunciation errors. One student sample demonstrating common mispronunciation errors is Maggy's. She responded to Task 4 with the following:

> *Hola Madre. Yo estoy en el estación de tren. Yo estoy en el hall y esparo en la sala de espera. Hay arahio y distribudor automático en el hall. En el kiosco es los libros del bosio y las suavestas y periódicos. Yo compro una revista para ler cuando yo espero. En el andén es la vija, el tren, y los personas viaje de California. En el ventenilia yo compro mi bolete. Yo compro bolete de ira y vulta para California. / Hello, Mom. I am in the train station. I am in the hall and I (not a word) in the waiting room. There is a (not a word) and a automatic (not a word) in the hall. In the kiosk is the books of (not a word) and (not a word) and newspapers. I buy a magazine to (not a word) when I wait. On the platform is the (not a word), the train, and the people going to California. At the (not a word) I buy my (not a word). I buy a (not a word) of (not a word) and (not a word) for California.*

She incorrectly pronounced *"espero"* ("I wait") as *"esparo"* and *"leer"* ("to read") as *"ler."* She also mispronounced *"horario"* ("schedule") as *"arahio," "distribuidor"* ("distributor") as *"distribudor," "bolsillo"* ("pocket") as *"bosio," "revistas"* ("magazines") as *"suavestas," "via"* ("track") as *"vija," "ventana"* ("window") as *"ventenilia," "boleto"* ("ticket") as *"bolete,"* and *"ida y vuelta"* ("round-trip," literally "going and coming") as *"ira y vulta*." Clearly, mispronunciation did not deter from creating the following meaning:

> *Hello, Mom. I am at the train station. I am in the hall and I wait in the waiting room. There is a schedule and a vending machine in the hall. In the kiosk are the pocketbooks and magazines and newspapers. I buy a magazine to read when I wait. On the platform is the track, the train, and the people going to California. At the window I buy my ticket. I buy a round trip ticket for California.*

The teacher evaluated Maggy's response with a full score of 16 points.

APPENDIX E

Foreign Language Classroom Anxiety Scale (Horwtiz et al., 1986)

1. I never feel quite sure of myself when I am speaking in my foreign language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

2. I don't worry about making mistakes in language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

3. I tremble when I know that I'm going to be called on in language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

4. It frightens me when I don't understand what the teacher is saying in the foreign language.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

5. It wouldn't bother me at all to take more foreign language classes.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

6. During language class, I find myself thinking about things that have nothing to do with the course.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree195

7. I keep thinking that the other students are better at languages than I am.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

8. I am usually at ease during tests in my language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

9. I start to panic when I have to speak without preparation in language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

10. I worry about the consequences of failing my foreign language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

11. I don't understand why some people get so upset over foreign language classes.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

12. In language class, I can get so nervous I forget things I know.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

13. It embarrasses me to volunteer answers in my language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

14. I would not be nervous speaking the foreign language with native speakers.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

15. I get upset when I don't understand what the teacher is correcting.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

16. Even if I am well prepared for language class, I feel anxious about it.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

17. I often feel like not going to my language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

***18. I feel confident when I speak in foreign language class.**

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

19. I am afraid that my language teacher is ready to correct every mistake I make.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

20. I can feel my heart pounding when I'm going to be called on in language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

21. The more I study for a language test, the more confused I get.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

22. I don't feel pressure to prepare very well for language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree197

23. I always feel that the other students speak the foreign language better than I do.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

***24. I feel very self‐conscious about speaking the foreign language in front of other students.**

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

25. Language class moves so quickly I worry about getting left behind.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

26. I feel more tense and nervous in my language class than in my other classes.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

***27. I get nervous and confused when I am speaking in my language class.**

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

28. When I'm on my way to language class, I feel very sure and relaxed.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

29. I get nervous when I don't understand every word the language teacher says.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

***30. I feel overwhelmed by the number of rules you have to learn to speak a foreign language.**

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree197

***31. I am afraid that the other students will laugh at me when I speak the foreign language.**

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

32. I would probably feel comfortable around native speakers of the foreign language.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

33. I get nervous when the language teacher asks questions which I haven't prepared in advance.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

APPENDIX F

The Mini-AMTB (adapted to fit study)

1. If I were to rate my feelings about learning Spanish in order to interact with Native Spanish speakers, I would have to say they are:

Weak - - - - - Strong

[I would like to skip this question]

2. My attitude toward Native Spanish Speakers is:

Unfavorable - - - - - Favorable

3. My interest in languages other than Spanish and English is:

Very Low - - - - - Very High

4. My desire to learn Spanish is:

Weak - - - - - Strong

5. My attitude toward learning Spanish is:

Unfavorable - - - - - Favorable

6. My attitude toward my Spanish teacher is:

Unfavorable - - - - - Favorable

7. If I were to rate my feelings about learning Spanish for practical purposes such as to improve my job opportunities, I would say that they are:

Weak - - - - - Strong

8. My anxiety in speaking Spanish outside of class is:

Very Low - - - - - Very High

9. My attitude toward my Spanish class is:

Unfavorable - - - - - Favorable

10. My anxiety level in my Spanish class is:

Very Low - - - - - Very High

11. I would characterize how hard I work at learning Spanish as:

Very little - - - - - Very much

REFERENCES

Aida, Y. (1994). Examinations of Horwitz, Horwitz and Cope's construct of foreign language anxiety: The case of students of Japanese. *Modern Language Journal, 78*, 155-168.

Alderson, J. Charles (2005). *Diagnosing Foreign Language Proficiency: The Interface between Learning and Assessment*. New York: Continuum.

Bachman, L.F. & Palmer, A.S. (1996). *Language testing in practice*. Oxford: Oxford University Press.

Bailey, P., Onwuegbuzie, A.J., & Daley, C.E. (2000). Correlates of anxiety at three stages of the foreign language learning process. *Journal of Language and Social Psychology, 19*(4), 474-490.

Baker, S.C., & MacIntyre, P.D., (2000). The role of gender and immersion language orientations. *Language Learning, 50*(2), 311-341

Bird, C.M. (2005) How I stopped dreading and learned to love transcription. *Qualitative Inquiry, 11(2),* 226-248.

Brophy,J., (1999). *Working with perfectionist students*. (Report No. 4) Urban, IL:ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED400124)

Burgoon, J. K. (1976). The unwillingness-to-communicate scale: Development and validation. *Communication Monographs, 43*, 60-69.

Campbell, D. T. (1963). Social attitudes and other acquired behavioral dispositions. In S. Koch (Ed.), *Psychology: A study of a science* (pp. 94-172). New York: McGraw-Hill.

Chang, M.M. (2005). Applying self-regulated learning strategies in a Web-based Instruction –An

investigation of motivation perception. *Computer Assisted Language Learning 18(3),* 217-230.

Chang, M.M., & Lehman, J. (2002). Learning foreign language through an interactive multimedia program: An experimental study on the effects of the relevance component of the ARCS model. *CALICO Journal, 20(1),* 81–98.

Chapelle, C. (2001). *Innovative language learning: achieving the vision.* Cambridge: Cambridge University Press.

Chapelle, C. (2009). The relationship between second language acquisition theory and computer-assisted language learning. *Modern Language Journal, 93,* 741-753.

Chastain, K. (1975) Affective and ability factors in second language acquisition. *Language Learning 25*, 153-61.

Chen, Y. M. (2008). Learning to self-assess oral performance in English: A longitudinal case study. *Language Teaching Research, 12 (2),* 235-262.

Cheng, Y. (2002).Factors associated with foreign language writing anxiety. *Foreign Language Annuals, (35) 5,* 647-56.

Cheng, Y., Horwitz, E.K., & Schallert, D.L. (1999). Language anxiety: Differentiating writing and speaking components. *Language Learning, 49*, 417-446.

Chun, D. (2006). CALL technologies for L2 reading. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching* (pp. 81-98). CALICO monograph Series (Vol. 5). San Marcos, TX: CALICO.

Clément, R. (1980). Ethnicity, contact, and communicative competence in a second language. In H. Giles, P. Robinson, & P.M. Smith (Eds.), *Language: Social*

psychological perspectives (pp. 147-154). Oxford, England: Pergamon.

Clément, R., Dörnyei, Z., & Noels, K.A. (1994). Motivation, self-confidence, and group cohesion in the foreign language classroom. *Language Learning, 44*, 417-448.

Cobb, T. (2007). Computing the vocabulary demands of L2 reading. *Language Learning & Technology, 11,* 38-63.

Creswell, J. (2013). *Qualitative Inquiry & Research Design: Choosing Among Five Approaches.* Los Angeles: Sage Publications.

Crookes, G., & Schmidt, R.W. (1991). Motivation: Reopening the research agenda. *Langauge Learning, 41*, 469-512.

Deci, E.L., Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

Doll, W. Jr. (1993). *A post-modern perspective on curriculum*. New York: Teachers College Press.

Dörnyei, Z. (1990). Conceptualizing motivation in foreign language learning. *Language Learning, 40,* 46-78.

Dörnyei, Z. (2001). *Teaching and Researching Motivation*. Harlow: Longman.

Dörnyei, Z. (1994). Motivation and motivating in the foreign language classroom. *Modern Language Journal, 78,* 273-284.

Dörnyei, Z., & Clément, R. (2000, March) *Motivational characteristics of learning different target languages: Results of a nationwide survey*. Paper presented at the AAAL convention, Vancouver, British Columbia, Canada.

Dörnyei, Z., & Schmitt, R. (Eds.). (2001). *Motivation and second language acquisition*. Honolulu: University of Hawai'i Press

Doughty, C., & Williams, J. (1998). *Focus on form in the classroom second language acquisition*. New York: Cambridge University Press.

Ellis, R. (1994) *The study of second language acquisition*. Oxford, England: Oxford University Press.

Frantzen, D., & Magnan, S.S. (2005). Anxiety and the true beginner-false beginner dynamic in the beginning French and Spanish classes. *Foreign Language Annals, 38*, 171-190.

Gardner, R.C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London: Edward Arnold.

Gardner, R.C., Smythe, P.C., & Clément, R. (1979). Intensive second language study in a bicultural milieu: An investigation of attitudes, motivation, and language proficiency. *Language Learning, 29*, 305-320.

Gardner, R.C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London: Edward Arnold.

Gardner, R. C. (2001). Integrative motivation and second language acquisition. In Z. Dörnyei & R. Schmidt (Eds.), *Motivation and second language acquisition*. Honolulu, HI: The University of Hawaii, Second Language Teaching & Curriculum Center, 1-19.

Gardner, R.C. (2006). The socio-educational model of second language acquisition: A research paradigm. In S.H. Foster-Cohen, M.M. Krajnovic, & J.M. Djigunovic (Eds.), *EUROSLA yearbook. Annual Conference of the European Second Language Association.* Amsterdam: Benjamins.

Gardner, R.C. (2010) *Motivation and Second Language Acquisition: The Socio-educational Model.* New York: Peter Lang Publishing.

Gardner, R. C., Lalonde, R. N., & Moorcroft, R. (1985). The role of attitudes and motivation in second language learning: Correlational and experimental considerations. *Language Learning, 35*, 207-227

Gardner, R.C., & MacIntyre, P.D. (1991). An instrumental motivation in language study: Who says it isn't effective*? Studies in Second Language Acquisition 13,* 57-72.

Gardner, R. C., & MacIntyre, P. D. (1993). On the measurement of affective variables in second language learning. *Language Learning, 43*, 157-194.

Gardner, R.C, Masgoret, A.M., Tennant, J., & Mihic, L. (2004). Integrative motivation: changes during a year-long intermediate-level language course. *Language Learning, 54,* 1-34.

Gardner, R.C., & Smythe, P. (1981). On the development of the attitude/motivation test battery. *Canadian Modern Language Review, 37,* 510-525.

Garrett, N. (1991). Technology in the service of language learning: Trends and issues. *Modern Language Journal, 75,* 74-101.

Gass, S. (1997). *Input, interaction and the second language learner*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Gilksman, L., Gardner, R., & Smythe, P. (1982). The role of the integrative motive on students' participation in the French classroom. *Canadian Modern Language Review, 38*, 625-647.

Gregersen, T.S. & Horwitz, E.K. (2002). Language learning and perfectionism: Anxious and non-anxious language learners' reactions to their own oral performance. *Modern language journal, 86*, 562-570.

Heckhausen, H. (1991). *Motivation and action*. New York: Springer.

Hernández, T. (2006). Integrative motivation as a predictor of success in the intermediate foreign language classroom. *Foreign Language Annals, 39,* 605-617.

Hewitt, E., & Stephenson, J. (2012). Foreign language anxiety and oral exam performance: a replication of Phillip's MLJ study. *The Modern Language Journal, 96*, 170-189.

Horwitz, E.K. (1986). Preliminary evidence for reliability and validity of foreign language anxiety scale. *TESOL Quarterly*, *20*, 559-562.

Horwitz, E.K. (1990). Attending to the affective domain in the foreign language classroom. In S.S. Magnan (Ed.) *Shifting the instructional focus to the learner* (pp. 15-33). Middlebury, VT: Northeast Conference on Teaching Foreign Languages.

Horwitz, E.K. (1991). Preliminary evidence for reliability and validity of foreign language anxiety scale. In E.K. Horwith & D.J. Young (Eds.), *Language anxiety: From theory and research to classroom implications* (pp. 37-39). Englewood Cliffs, NJ: Prentice-Hall.

Horwitz, E. K. (2000). It ain't over til it's over: On foreign language anxiety, first language deficits, and the confounding of variables. *The Modern Language Journal, 84*, 256-259.

Horwitz, E.K. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics, 21,* 112-126.

Horwitz, E.K., Horwitz, M.B., & Cope, J. (1986). Foreign language classroom anxiety. *Modern Language Journal, 70,* 125-132.

Hsu, H-Y., Wang, S-K., & Comac, L. (2008). Using audioblogs to assist English-language

learning: an investigation into student perception. *Computer Assisted Language Learning, 21(2),* 181-198.

Hubbard, P., & Bradin Siskin, C. (2004). Another look at tutorial CALL. *ReCALL, 16, 448-461.*

Jeon-Ellis, G., Debski, R. and Wigglesworth, G. (2005) Oral interaction around computers in the project-oriented call classroom. *Language Learning & Technology, 9(3)*, 121–145.

Jepson, K. (2005) Conversations - and negotiated interaction - in text and voice chat rooms. *Language Learning & Technology, 9(3),* 79–98.

Johnson, R.B., & Onwuegbuzie, A.J. (2004). Mixed methods research: a research paradigm whose time has come. *Educational Researcher*, 33, 14-26.

Keller, J.M. (1984). The use of the ARCS model of motivation in teacher training. In K.E. Shaw (Ed.), *Aspects of educational technology: Volume XVII: Staff development and career updating* (pp.140-145). London: Kogan Page.

Kern, R. (2006). Perspectives on techonology in learning and teaching languages. *Tesol Quarterly, 40, 183-203.*

Kern, R.G., & Warschauer, M. (2000). Theory and practice of network-based language teaching. In M. Warschauer & R. Kern (Eds.) *Network-based language teaching: Concepts and practice* (pp. 1-19). Cambridge, UK: Cambridge University Press.

Kim, J-H. (2000). Foreign language listening anxiety: A study of Korean students learning English. (Unpublished doctoral dissertation). The University of Texas, Austin.

Kleinmann, H. H. (1977). Avoidance behavior in adult second language acquisition. *Language Learning, 27*, 93-107.

Krashen, S. (1982). *Principles and practices in second language acquisition*. New York: Pergamon Press.

Krueger, R. & Casey, M. (2014). *Focus Groups: A Practical Guide for Applied Research.* New Delhi: Sage Publications.

Lafford, B., Lafford, P., & Sykes, J. (2007*). Entre el dicho y hecho*…: An assessment of the application of research from second language acquisition and related fields to the creation of Spanish CALL materials for lexical acquisition. *CALICO Journal, 24*, 497-529.

Levelt (1989) lanaguage production and working memory

Lewkowicz, J.A., (2000). Authenticity in language testing: some outstanding questions. *Language Testing, 17,* 43-64.

Little, D. (2007). Language learner autonomy: Some fundamental considerations revisited. *Innovation in Language Learning and Teaching, 1 (1), 14-29.*

Liu, M., & Jackson, J. (2008). An exploration of Chinese EFL learners' unwillingness to communicate and foreign language anxiety. *Modern Language Journal, 92*, 71-86.

Long, M.H. (1996). The role of the linguistic environment in second language acquisition. W.C. Ritchie, & T.K. Bhatia, (Eds.) *Handbook of second language acquisition*, (pp. 413-468). San Diego: Academic Press.

Lynch, T., & Maclean, J. (2003). Effects of feedback on performance: A study of advanced learners on a ESP speaking course. *Edinburgh Working Papers in Applied Linguistics, 12,* 19-44.

MacIntyre, P. D., & Gardner, R. C. (1991a). Anxiety and second language learning:

Toward a theoretical clarification. Chapter 5 in E. K. Horwitz & D. J. Young (Eds.), Language anxiety: From theory and research to classroom implications. Englewood Cliffs, NJ: Prentice Hall. (pp. 41-53).

MacIntyre, P.D. & Gardner, R.C. (1991b). Methods and results in the study of anxiety in language learning: A review of the literature. *Language Learning, 41*, 85-117.

MacIntyre, P.D., & Gardner, R.C. (1994). The subtle effects of language anxiety on cognitive processing in the second language. *Language Learning*. *44,* 283-305.

Mak, B.S., & White, C. (1997). Communication apprehension of Chinese ESL students. *Hong Kong Journal of Applied Linguistics, 2*, 81-95.

Masgoret, A.M. & Gardner, R.C. (2003). Attitudes, motivation, and second language learning: a meta-analysis of studies conducted by Gardner and associates. *Language Learning, 53*, 123-163.

Matsuda. S., & Gobel, P. (2001). Quiet apprehension: Reading and classroom anxieties. *JALT Journal*, 23, 227-247.

Matsuda, S., & Gobel, P. (2004). Anxiety and predictors of performance in the foreign language classroom. *System, 32,* 21-26.

Morrow, S. L. (2005). Quality and trustworthiness in qualitative research in counseling psychology. *Journal of Counseling Psychology, 52,* 250– 260.

Nation, P. (2001). *Learning vocabulary in another language*. Cambridge, UK: Cambridge University Press.

Noels, K.A. (2001). Learning Spanish as a second language: Learner's orientation and perceptions of their teachers' communication style. *Language Learning, 51*, 107-144.

Oh, J. (1990). *On the relationship between anxiety and reading in English as a foreign*

language among Korean university students in Korea. (Unpublished doctoral dissertation). University of Texas at Austin.

Oller, J.W., (1978) Attitude variables in second language learning. In M. Burt, H. Dulay, & M. Finocchiaro (Eds.), *Viewpoints on English as a second language* (pp. 172-184). New York: Regents.

Oxford, R. L. (1996). New pathways of language learning motivation. In R.L. Oxford (Ed.), *Language Learning motivation: pathways to a new century* (Technical Report no. 11, pp. 1-8). Honolulu: University of Hawaii at Manoa, Second Language Teaching and Curriculum Center.

Payne, J. S., & Whitney, P. J. (2002). Developing L2 oral proficiency through synchronous CMC: Output, working memory, and interlanguage development. *CALICO Journal, 20 (1),* 7-32.

Peters, M., Weinberg, A., & Sarma, N. (2009) To like or not to like! Student perceptions of technological activities for learning French as a second language at five Canadian institutions. *Canadian Modern Language, 65*, 8679-8896.

Pew Internet and American Life Project (2002). *The digital disconnect: the widening gap between the Internet-savvy students and their schools*. Retreived from http://www.pewinternet.org/pdfs/PIP_Schools_Internet_Report.pdf

Phillips, E. (1992). The effects of language anxiety on students' oral test performance and attitudes. *Modern Language Journal, 76*, 14-26.

Piaget, J. (1980). *Adaptation and intelligenc*e (G. Eames, Trans.). Chicago: University of Chicago Press.

Pica, T. (1994). Questions from the language classroom: Research perspectives. *TESOL Quarterly, 28-49-70.*

Pica, T., Kanagy, R. & Faludin, J. (1993). Choosing and using communication tasks for second language instruction. In G. Crookes and S. Gass (Eds.), *Tasks and language learning: Integrating theory & practice*. Celvedon, England: Multilingual Matters, Ltd.

Pichette, F. (2009). Second language anxiety and distance language learning. *Foreign Language Annals, 42*, 77-93.

Pierce, B. (1995). Social identity, investment, and language learning. *TESOL Quarterly, 29,* 9-31.

Presky, M. (2001a, October). Digital natives, digital immigrants. *On the Horizon*. NCB University Press, 9 (5).

Presky, M. (2001b, December). Digital natives, digital immigrants, Part II: Do they really think differently? *On the Horizon*. NCB University Press, 9 (6).

Raby, F. (2007). A triangular approach to motivation in Computer Assisted Autonomous Language Learning (CAALL). *ReCALL* 19(2), 21-38.

Ranalli, J. (2009). Prospects for developing L@ students' effective use of vocabulary learning strategies vie Web-based training. *CALICO Journal, 27,* 161-168.

Robinson, P. (1995). Attention, memory, and the "noticing" hypothesis. *Language Learning, 45*, 283-331.

Rodríguez, M., & Abreu, O. (2003). The stability of general foreign language classroom anxiety across English and French. *Modern Language Journal, 87*, 356-374

Saito, Y., Horwitz, E., & Garza, J. (1999) Foreign Language Reading Anxiety. *The*

Modern Language Journal, 83, 202-218.

Schmidt, R. (1990). The role of consciousness in second language acquisition. *Applied Linguistics, 11*, 219-258.

Schumann. J.H. (1978) The acculturation model for second language acquisition. In R. Gingras (Ed.). *Second language acquisition and foreign language teaching* (pp. 27-50). Arlington, VA: Center for Applied Linguistics.

Scovel, T. (1978). The effect of affect: A review of the anxiety literature. *Language Learning, 28*, 129-142.

Skehan, P. (1989). *Individual differences in second language acquisition*. London: Edward Arnold.

Smith, B. (2009). Revealing the nature of SCMC interaction. In A. Mackey & C. Polio (Eds.), *Multiple perspectives on interaction* (pp. 197-225). Mahwah, NJ: Erlbaum.

Sparks, R., & Ganschow, L. (1991). Foreign language learning difficulties: Affective or native language aptitude differences? *Modern Language Journal, 75*, 3-16

Sparks, R.L., & Ganschow, L. (2007). Is the Foreign Language Classroom Anxiety Scale measuring **anxiety or language skills**? *Foreign Language Annals, 40*(2), 260-287.

Spielberger, C.D. (1983). *Manual for the state-trait anxiety inventory*. Palo Alto, CA: Consulting Psychologists Press.

Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J. Lantolf (Ed.), *Sociocultural approaches to second language research (pp. 97–115)*. Oxford: Oxford University Press.

Tanaka, K., & Ellis, R. (2003). Study abroad, language proficiency, and learner

beliefs about language learning. *JALT Journal, 25*, 63-85.

Tennant, J. & Gardner, R. C. (2004) The Computerized mini-AMTB. *CALICO Journal, 21*, 245-263.

Thorne, S., & Payne, S. (2005). Evolutionary trajectories, internet-mediated expression, and language education. CALICO Journal, 22, 371-397.

Ushida, E. (2005) The role of students' attitudes and motivation in second language learning in online language courses. *CALICO Journal, 23*, 49-78.

Vogely, A. J. (1998). Listening comprehension anxiety: Students' reported sources and solutions. *Foreign Language Annals, 31*, 67–80.

Volle, L. M. (2005) Analyzing oral skills in voice e-mail and online interviews. *Language Learning & Technology, 9(3),* 146–163.

Vygotsky, L.S. (1929) The problem of the cultural development of the child. *Journal of Genetic Psychology, 36*, 414-434.

Vygotsky, L. S. (1978). Interaction between learning and development (M. Lopez-Morillas, Trans.). In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.), *Mind in society: The development of higher psychological processes* (pp. 79-91). Cambridge, MA: Harvard University Press.

Warschauer, Mark (1996). Motivational aspects of using computers for writing and communication. In Mark Warschauer (Ed.), *Telecollaboration in foreign language learning: Proceedings of the Hawai'i symposium.* (Technical Report #12) (pp. 29–46). Honolulu, Hawai'i: University of Hawai'i, Second Language Teaching & Curriculum Center

Woodrow, L. (2006). A model of adaptive language learning. *Modern Language*

Journal, 90, 297-319.

Yang, M., Badger, R., & Yu, Zhen. (2007). A comparative study of peer and teacher feedback in a Chinese EFL writing class. *Journal of Second Language Writing, 13(3*), 179–200.

Zhang, X. (2004). Language anxiety and its effect on oral performance in classroom [sic]. Retrieved from: http://www.celea.org.cn/pastversion/lw/pdf/ ZhangXianping.pdf

ABSTRACT

COMPUTER ASSISTED LANGUAGE LEARNING FOR SPANISH ORAL PROFICIENCY

by

MAY RITTA BLUESTEIN

December 2017

Advisor: Dr. Jazlin Ebenezer

Major: Curriculum and Instruction

Degree: Doctor of Philosophy

This three-article five-chapter dissertation is focused on improving high school students' Spanish oral proficiency through computer assisted language learning (CALL) voice-recordings, and examining the effect of the intervention on foreign language anxiety and integrative motivation. The main goals of the study as a whole were to (1) investigate students' CALL voice-recordings to determine students' Spanish oral proficiency development, (2) identify significant differences between the experimental and control group in terms of Spanish oral proficiency, anxiety and integrative motivation, and (3) investigate experimental and control students' perceptions of their Spanish oral proficiency, anxiety and integrative motivation as a result of the CALL voice-recordings and traditional oral assessments, respectively. Overall, the study employed a mixed-methods approach. Article one consisted of an intervention on fourteen Spanish level-two high school students, engaging them in eight successive CALL task voice-recordings, which were transcribed verbatim and translated. The student scores for each of the eight CALL task voice-recordings were collected to assess the development of students' oral proficiency. A post-intervention focus group interview and self-reflective journals were used to identify the qualitatively differing ways the students perceived their experiences

using the CALL curricular unit for developing their Spanish oral proficiency. Articles two and three employed a mixed methods approach, using quantitative measures such as the Foreign Language Anxiety Scale (FLCAS) and the mini-Attitude and Motivation Test Battery (AMTB) to find significant differences in anxiety and integrative motivation between the experimental and control group. FLCAS and mini-AMTB data were collected and analyzed using the Mann-Whitney U tests comparing both groups' anxiety and motivation levels. Qualitative post-focus group interviews were conducted with experimental and control students, and experimental students' perceptions were written in a self-reflective journal post-study. In article one, the qualitative results of the CALL tasks oral recordings revealed that the students' Spanish oral language proficiency meaningful output was high, medium, or low. Specific areas of students' growth in verb conjugation or weakness in pronunciation, expressions and vocabulary, and grammatical structures were also identified. The qualitatively differing ways students perceived CALL task recordings were as follows: anxiety decrease, motivation and confidence increase, and speaking improvement. Friedman's tests were run to find significant differences in the students' oral proficiency from one to eight consecutive tasks. The p-values 0.003, 0.007, 0.002, 0.003, and 0.007 of the students' scores on CALL tasks (2, 4, 5, 6, and 7) respectively, when compared to task 8, show a significant difference. Too, these quantitative results indicate that students' meaningful output significantly improved by the time they reached the last task. In article two, Mann-Whitney U tests were run to find significant differences in the experimental group's anxiety in comparison to the control group's anxiety, both pre-and post study. Pearson correlations were run to find that a strong correlation exists between post-FLCAS scores and students' achievement, and the results of the post-focus group interviews and self-reflective

journals show a decrease in anxiety by the end of the study, corroborating the negative correlation found between anxiety and achievement. In article three, Mann-Whitney U tests were run to find significant differences in the experimental group's integrative motivation in comparison to the control group's integrative motivation, both pre- and post-study. Pearson correlations were run to find that a strong correlation exists between post-mini AMTB scores and students' achievement. The results of the post-focus group interviews, and experimental students' reflective journals, show an increase in motivation and confidence by the end of the study, corroborating the positive correlation found between integrative motivation and achievement. The results of article one imply CALL task oral recordings accompanied by self-evaluation and teacher feedback help students develop oral proficiency, archive meaningful output, monitor their own learning, and experience lower anxiety, higher motivation, and confidence towards speaking Spanish. Article two implies that increased oral communication experience leads to decreased anxiety, CALL oral tasks specifically help in decreasing anxiety towards speaking, and such decrease in anxiety leads to achievement on other assessments. Finally, article three implies that increased oral communication experience leads to increased integrative motivation, CALL oral tasks specifically help to increase motivation towards speaking, and such increase in motivation leads to achievement on other assessments.

AUTOBIOGRAPHICAL STATEMENT

MAY RITTA BLUESTEIN

Education:

2017- Doctor of Philosophy
Wayne State University, Detroit, MI
Major: Curriculum and Instruction
Cognate: French

2006- Education Specialist
Wayne State University, Detroit, MI
Major: ESL

2005- Master of Arts in Secondary Education
Wayne State University
Major: Foreign Language Instruction

2005 – Michigan Teacher Certification
Wayne State University, Detroit, MI
Grades 7-12 French/English

2003- Bachelor of Arts
Wayne State University, Detroit, MI
Major: French
Minor: English

Professional Experience:

2007-Present	French/English/ESL Teacher Bishop Foley High School, Madison Heights, MI
2011-2012	Teacher Assistant in Teacher Education Wayne State University, Detroit, MI
2006-2007	French Teacher Detroit Edison Public School Academy, Detroit, MI

Professional Memberships:

American Education Research Association (AERA)
American Council of Teachers of Foreign Language (ACTFL)

Scholarships & Awards:

Rumble Fellowship (2012 – 2013)
Wayne State University, Detroit, MI

Helen F. Gilbert Endowed Scholarship (2010 – 2011)
Wayne State University, Detroit, MI

June and John Rounding Endowed Scholarship (2010 – 2011)
Wayne State University, Detroit, MI

Retiring Faculty Award-Dr. Leonard Kaplan (2008-2009)
Wayne State University, Detroit, MI